

Draft Environmental Impact Statement Padilla Bay Estuarine Sanctuary



Proposed Estuarine Sanctuary Grant Award
for Padilla Bay, Skagit County, Washington



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Coastal Zone Management

and

STATE OF WASHINGTON
Department of Ecology



April 1980

UNITED STATES
DEPARTMENT OF COMMERCE

DRAFT ENVIRONMENTAL IMPACT STATEMENT


PROPOSED
ESTUARINE SANCTUARY GRANT AWARD
FOR
PADILLA BAY, SKAGIT COUNTY, WASHINGTON
TO
STATE OF WASHINGTON

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SUMMARY

BACKGROUND

In response to the intense pressures upon and conflicts within the coastal zone of the United States, Congress enacted the Coastal Zone Management Act (CZMA) of 1972 (PL 92-583). The Act authorized a new Federal program--administered by the National Oceanic and Atmospheric Administration (NOAA) within the Department of Commerce--to assist and encourage States to develop and implement comprehensive management programs for the resources of the coastal zone. The CZMA affirms a national interest in the effective management, beneficial use, protection, and development of the coastal zone and provides matching grant programs towards these ends.

These grant programs assist the coastal zone States (defined in the Act to include the Great Lake States and the territories of Guam, American Samoa, Puerto Rico, and the Virgin Islands, as well as the saltwater coastal States) in developing and administering comprehensive coastal zone land and water use management programs.

Section 315 of the CZMA established the Estuarine Sanctuary Program, which, on a matching basis, provides grants to States to acquire, develop, and operate estuarine areas to be set aside as natural field laboratories. These areas will be used primarily for long term scientific and educational purposes, which, in addition to other multiple-use benefits, will provide information essential to coastal management decisionmaking.

Examples of objectives of operating estuarine sanctuaries are:

- o To gain a thorough understanding of ecological relationships within the estuarine environment;
- o To make baseline ecological measurements;
- o To serve as a natural control in order to monitor changes and assess the impacts of human stresses on the ecosystem;
- o To provide a vehicle for increasing public knowledge and awareness of the complex nature of estuarine systems, their values and benefits to man and nature, and the problems that confront them; and
- o To encourage multiple use of the estuarine sanctuaries to the extent that such usage is compatible with the primary sanctuary purposes: research and education.

In order to ensure that the Estuarine Sanctuary Program includes sites that adequately represent regional and ecological differences, the guidelines for the Estuarine Sanctuary Program established a biogeographical classification scheme that reflects geographic, hydrographic, and biological characteristics. Eleven (11) different biogeographic categories are established and defined in the guidelines. Subcategories of this basic system will be utilized as appropriate to distinguish major regions or subclasses of each province. It is anticipated that a minimum of 21 sanctuaries will be necessary to provide adequate representation of the range of ecosystems within the United States.

The estuarine sanctuary guidelines, which were published in 1974, were modified in 1977 to specifically authorize the granting of 50% matching acquisition money in three stages: (1) an optional initial grant for such preliminary purposes as surveying and assessing the lands to be acquired and for developing management procedures and research programs; (2) for the actual acquisition of the real property within the sanctuary boundaries; and (3) subsequent grants for administration and operation of the established sanctuary.

The Department of Ecology (DOE), acting on behalf of the State of Washington, submitted a grant application to the U. S. Department of Commerce/NOAA on January 19, 1979, to establish an estuarine sanctuary in Padilla Bay, Skagit County, Washington. Padilla Bay is the largest area relatively undisturbed by man in Puget Sound, and is extremely accessible to great numbers of people for research and educational purposes. Consequently, NOAA awarded a preacquisition grant for \$50,000, which was matched by an equivalent amount by the State. This enabled DOE to proceed with developing a formal land acquisition application which, if approved, will provide funding for the acquisition of real property within the proposed project boundary area. The State will also have the option of requesting up to \$50,000 yearly (also matching) for operational funds if the acquisition grant is given.

PROPOSED ACTION

The grant request to NOAA for \$656,500, which will be matched by the State, will be used for the acquisition of approximately 11,612 acres of real property within Padilla Bay, Skagit County, Washington. Of the total amount, approximately 1,260 acres will be acquired in less than fee simple; i.e., conservation or nondevelopment easements. All other lands, excluding those identified for acquisition in easement and approximately 243 acres that are owned by Skagit County, the State Department of Game, and the State Parks Commission are currently privately owned and will be acquired in fee. The tidelands of Padilla Bay are classified as second class tidelands in the State of Washington and comprise approximately 10,289 acres of the total proposed for the estuarine sanctuary area.

The composition of real property within the proposed sanctuary area is as follows:

<u>Identification</u>	<u>Size in Acres</u>
Orion Corporation - fee ownership	5,565
Orion Corporation - optioned real property	3,461
Skagit County	99
State of Washington	144
Associated Oyster Lands	930
Private - multiple ownerships	<u>1,413</u>
	11,612

DOE's authority for initiating the application to establish an estuarine sanctuary was identified in the preliminary application, which was approved by NOAA March 26, 1979. The definition of a sanctuary, its purposes, sanctuary uses, the process for selecting Padilla Bay as an estuarine sanctuary and why it is important, etc., were all described in detail in the preliminary application, a part of which is included as Appendix VI of this draft environmental impact statement.

To provide maximum public decisionmaking for the proposed estuarine sanctuary, DOE established two citizen committees (Steering Committee and Technical Advisory Committee) within the project area to study and determine the proposed sanctuary area and the programs that will be conducted within the estuarine sanctuary. Therefore, the contents of this draft environmental impact statement that are technical in nature also reflect the policy decisions made by the two committees for the formation of the estuarine sanctuary. These policy decisions were recommended to, and accepted by, the Department of Ecology, State of Washington.

COMMITTEE PURPOSE AND STRUCTURE

The formation of the two committees was designed to provide public participation at the beginning of the estuarine sanctuary application process, so the views of local government, Federal agencies, affected landowners, and user organizations would be a consideration and motivating factor during the decisionmaking process and would not be an informal

after-the-fact review of a completed project. The goal was to develop a proposal that was a "consensus of opinion" by those individuals or groups that would be most affected by the estuarine sanctuary proposal.

DOE assured the two committees that their participation was essential to the formation of the proposed estuarine sanctuary and that their decisions regarding sanctuary boundaries, size, and the sanctuary uses (research, education, and recreation programs) would be incorporated into the DOE/State application to NOAA as long as the decisions were consistent with the U.S. Department of Commerce/NOAA guideline requirements and appropriate Federal and State statutes. These recommendations have been incorporated into this draft environmental impact statement.

Of primary concern was the formation of a philosophy that allowed for coexistence of an environmental area (the estuarine sanctuary), industry, agriculture, and other endeavors all within a community. This philosophy entailed the identification of an environmental area as an essential part of the community--no more or less than other community needs--and that together with the economic base provided by industry and the open space associated with agriculture, etc., the proposed estuarine sanctuary will provide, by establishing a public use area with multiple public use opportunities, a positive environmental contribution to the overall social impact and livability of the community.

In addition, several policy positions that were in keeping with the desired relationship DOE wanted to establish with local governmental agencies regarding land acquisition were identified:

- A. The State will not use the right of eminent domain (condemnation) in the land acquisition program;
- B. Real property acquisition will be negotiated and acquired on a "willing seller" concept; and
- C. Acquisition of real property that includes residences or business and the relocation of people will not be initiated by the State.

Management

Uses that are compatible with the intent of establishing the estuarine sanctuary will be allowed under existing local, State, and Federal statutes. Uses that would destroy or alter the nature of the ecosystem will not be allowed within the sanctuary. Examples of allowed uses are: sport and commercial fishing and shellfish harvesting, hunting, non-intensive recreation, navigation, and the maintenance dredging of existing channels. Prohibited activities include: expansion of existing channels

or creation of new channels unless specifically authorized by statutes, and significant alteration of water flow patterns including circulation patterns within the bay.

The Manager for the land and waters of the proposed sanctuary will be the Washington State Department of Game. To assist the Department with this task, the Padilla Bay Estuarine Sanctuary Management Committee will provide a vehicle for the consideration and approval of recommendations to the Game Department for management activities. This advisory committee will be selected by the Steering Committee previously discussed.

Research, Education and Recreation Plans

The proposed Padilla Bay Research Program (as determined by the Padilla Bay Estuarine Sanctuary Technical Committee--Research Subcommittee) has been designed to utilize the services of two local marine laboratories and an interpretative center that will both assist the marine laboratories in their efforts and will initiate its own research efforts in the sanctuary. An interpretative center would: (1) complement and fill identified research voids in programs that cannot be provided by existing facilities and/or programs, (2) provide an opportunity for private and public bodies to study, analyze, and interpret the ecosystems and biological characteristics in the Padilla Bay area in particular, and the north Puget Sound area, in general, and (3) establish for research and education programs an on-site centralized public use facility that will provide an opportunity for a better understanding of the importance and value of estuarine systems and their management needs for citizens, schools, and public and private organizations.

The education program element of the Estuarine Sanctuary Program was initiated by the Padilla Bay Technical Committee--Education Subcommittee, approved by the full Technical Committee, and adopted by the Steering Committee as the Padilla Bay Estuarine Sanctuary Education Policy and Program. The following are the goals for utilizing Padilla Bay as a learning resource:

1. An accurate and comprehensive grounding in how the estuarine environment works;
2. Experience in valuing environmental quality;
3. Experience in how personal choices and actions affect environmental quality; and
4. Experience in methods of enacting community responsibility.

It is the intent of the DOE to use this environmental education plan as a guideline to establish an environmental education link between the general public (individual citizens, recreation, environmental, and social groups, etc., and clubs and organizations) and institutions of learning (universities, common schools, governmental agencies, etc.).

The recreation program element of the Estuarine Sanctuary Program was initiated by the Padilla Bay Technical Committee--Recreation Subcommittee, approved by the full Technical Committee, and adopted by the Steering Committee as the Padilla Bay Estuarine Sanctuary Recreation Policy and Program, with the additional requirement that all current uses (recreational) that now exist in Padilla Bay will continue once the estuarine sanctuary is established.

NOAA's Estuarine Sanctuary Guidelines state that while the primary purpose of estuarine sanctuaries is to provide long term protection for natural areas, so that they might be used for scientific and educational purposes, multiple use of estuarine sanctuaries may be increased to the extent that such use is compatible with the primary sanctuary purpose. The capacity of a given sanctuary to accommodate multiple uses and the kinds and intensity of such uses will be determined on a case-by-case basis. While it is anticipated that compatible uses may generally include activities such as low intensity recreation (i.e., fishing, hunting, boating, non-commercial taking of shellfish, wildlife conservation, commercial fishing, etc.), it is recognized that the exclusive use of a specific area for scientific or educational purposes may provide the optimum benefit to coastal zone management and recreational resource use restriction may, on occasion, be necessary.

The Steering Committee was responsible for providing the direction and decisions for establishing the sanctuary. The committee, composed of 12 members, of whom 9 were "local residents," represented a diversified and responsible segment within the community to provide the direction for the proposed sanctuary project. Composition of the committee included: the manager of the Port of Anacortes (in which the project area is located); Chairman of the Board of County Commissioners; from industry, the managers of two oil refineries located near the west boundary of the proposed sanctuary; the director of an Indian tribal community that borders on the proposed sanctuary boundary; the director of the State Department of Game; the president of the State Environmental Council; the president of the community college in the area in which the sanctuary is proposed; a former Western Washington University president who is now director of the University's marine laboratory program; the director of the University of Washington's marine laboratory facilities in the San Juan Islands; the president of the State Sportsmen's Council; a city councilman in the city located nearest to the project area; and the area manager of the U.S. Fish and Wildlife Service.

The formation of the membership of the Technical Advisory Committee was determined by members of the Steering Committee, as well as DOE. This committee was composed of 23 members, basically people who are qualified authorities in the areas of government, education, research, recreation, and the environment. Of the 23 members, 13 were "local residents."

It was the responsibility of the Technical Advisory Committee to consider all aspects of the formation of the proposed estuarine sanctuary project. This committee was divided into five subcommittees (boundary and project area, research, education, recreation, and financial resources) that studied required aspects of the proposed project using NOAA estuarine sanctuary procedural guidelines and made recommendations to the full Technical Committee.

Once the full Technical Committee reached a decision and approved the subcommittee recommendations for the sanctuary project, those recommendations were submitted to the Steering Committee. The Steering Committee considered each Technical Committee recommendation and through coordination with the Technical Committee and its decisionmaking process, approved the recommendations or variations thereof as policy direction.

DOE will use the policy direction established by the Steering Committee as part of its application for the land acquisition portion of the proposed sanctuary project.

(Additional information, including membership lists of the two committees, is included in Appendix VII of this document.)

The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The second part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The third part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The fourth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The fifth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The sixth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The seventh part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The eighth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The ninth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science. The tenth part of the paper is devoted to a detailed discussion of the problem of the origin of life. It is shown that the problem is one of the most important and interesting in the history of science.

PART I: PURPOSE OF AND NEED FOR ACTION

In response to the intense pressures upon the vitally important coastal zone of the United States, Congress passed the Coastal Zone Management Act (CZMA), which was signed into law on October 27, 1972 (P.L. 92-583), and amended in 1976. The CZMA authorized a Federal grant-in-aid and assistance program to be administered by the Secretary of Commerce, who in turn delegated this responsibility to the Office of Coastal Zone Management (OCZM) of the National Oceanic and Atmospheric Administration (NOAA).

The CZMA affirms a national interest in the effective protection and development of the Nation's coastal zone, and provides assistance and encouragement to coastal States (including those bordering the Atlantic and Pacific Oceans, the Gulf of Mexico, and the Great Lakes) and U.S. territories to develop and implement State programs for managing their coastal zones. The Act established a variety of grant-in-aid programs to such States for the purposes of:

- o developing coastal zone management programs (§305);
- o implementing and administering management programs that receive Federal approval (§306);
- o avoiding or minimizing adverse environmental, social, and economic impacts resulting from coastal energy activities (§308);
- o coordinating, studying, planning, and implementing interstate coastal management activities and programs (§309);
- o conducting research, study, and training programs to scientifically and technically support State coastal management programs (§310); and
- o acquiring estuarine sanctuaries and acquiring land to provide for shorefront access and island preservation (§315).

The Estuarine Sanctuary Program authorized by §315 of the CZMA establishes a program to provide matching grants to States to acquire, develop, and operate natural estuarine areas as sanctuaries so that scientists and students may be provided the opportunity to examine the ecological relationships within the areas over a period of time. §315 provides a maximum of \$2,000,000 of Federal funds, to be matched by

the equivalent amount from the State, for each sanctuary. Guidelines for implementation of the Estuarine Sanctuary Program were published in final form on June 4, 1974 [15 CFR Part 921, Federal Register 39 (108): 19922-19927] and amended on September 9, 1977 [15 CFR Part 921, Federal Register 42 (175): 45522-45523] (Appendix I).

Sanctuaries established under this program have the dual purpose of (1) providing relatively undisturbed areas so that a representative series of natural coastal ecological systems will always remain available for ecological research and education; and (2) ensuring the availability of natural areas for use as a control against which impacts of human activities in other areas can be assessed. These sanctuaries are to be used primarily for long term scientific and educational purposes, especially to provide information essential to coastal zone management decisionmaking. Such research programs may include:

- o Gaining a thorough understanding of the natural ecological relationships within the variety of estuarine environments of the United States;
- o Making baseline ecological measurements;
- o Serving as a natural control against which changes in other estuaries can be measured, and facilitating evaluation of the impact of human activities on estuarine ecosystems; and
- o Providing a vehicle for increasing public knowledge and awareness of the complex nature of estuarine systems, their values and benefits to man and nature, and problems with which estuaries are confronted.

While the primary purpose of estuarine sanctuaries is scientific and educational, multiple use of estuarine sanctuaries will be encouraged to the extent such usage is compatible with the primary sanctuary purpose. Such uses may generally include such activities as low intensity recreation, boating, non-commercial taking of shellfish, fishing, hunting, and wildlife observation.

The CZMA and the sanctuary guidelines envision that the Estuarine Sanctuary Program ultimately will fully represent the variety of regional and ecological differences among estuaries. The regulations indicate that "the purpose of the estuarine sanctuary program. . .shall be accomplished by the establishment of a series of estuarine sanctuaries which will be designated so that at least one representative of each estuarine ecosystem will endure into the future for scientific and educational purposes" [15 CFR 921.3(a)]. As administered by OCZM, the Estuarine Sanctuary Program defined 11 different biogeographic provinces or classifications

based on geographic, hydrographic, and biologic characteristics. Subcategories of this basic system will be utilized as appropriate to distinguish major regions or subclasses of each province. It is anticipated that a minimum of 21 sanctuaries will be necessary to provide adequate representation of the Nation's estuarine ecological systems.

Between 1974 and the present, OCZM has awarded grants to establish seven estuarine sanctuaries. These include:

<u>Sanctuary</u>	<u>Biogeographic Classification</u>
South Slough Coos Bay, Oregon	Columbian
Duplin River/ Sapelo Island, Georgia	Carolinian
Waimanu Valley Island of Hawaii, Hawaii	Insular
Rookery Bay Collier County, Florida	West Indian
Old Woman Creek Erie County, Ohio	Great Lakes
Apalachicola River/Bay Franklin County, Florida	Louisianian
Elkhorn Slough Monterey County, California	Californian

The proposed action currently under consideration by OCZM is the formal grant application by the State of Washington for an estuarine sanctuary consisting of approximately 11,612 acres of lands and waters within Padilla Bay, which includes 16 miles of shoreline. The application requests \$656,500 from NOAA, to be matched by \$656,500 appropriated by the State legislature, for the purchase of approximately 11,612 acres of tidelands. The proposed sanctuary would be representative of a major subcategory of the Columbian Biogeographic Classification, further completing the series of nationwide representative estuarine systems established as provided for in §315 of the CZMA.

The proposal follows several years of interest in and concern about the Padilla Bay system by State and local officials, Federal agencies, universities, environmentally oriented organizations, and concerned individuals. Padilla Bay is the largest area relatively undisturbed by

man in Puget Sound and it is extremely accessible to great numbers of people for research, educational, and recreational purposes. It is also a prime site for industrial development. As a result of the great deal of concern expressed for this area, in 1979 Washington submitted an application to OCZM for a preliminary acquisition grant for the Padilla Bay system. In March 1979, OCZM awarded Washington a \$50,000 preliminary acquisition grant, which enabled the State to 1) complete an appraisal of the lands proposed to be acquired; and 2) prepare management, education, research, and recreation plans.

PART II: ALTERNATIVES (INCLUDING PROPOSED ACTION)

A. Preferred Alternative

The State of Washington has submitted an application for a grant in the amount of \$656,500 from OCZM, to be matched by an equivalent (or greater) amount of State funds, for the acquisition and establishment of an estuarine sanctuary within Padilla Bay. The grant would enable Washington to acquire and operate an estuarine sanctuary that approximates a natural ecological unit. The proposed sanctuary would include 11,612 acres of real property, of which 243 acres are now publicly owned. Acquisition will be through negotiation only, since the Steering Committee and State of Washington have agreed on a policy of no condemnation. The proposed sanctuary will be managed by the Washington State Department of Game.

1. Boundaries and Acquisition of Sanctuary Lands

The proposed sanctuary boundary described here is consistent with the boundary approved by the Steering Committee (November 29, 1979) and the State of Washington Department of Ecology. See Figure 1 for location and boundary map.

Located in northern Puget Sound, Padilla Bay lies approximately five miles northeast of Anacortes and nine miles northwest of Mount Vernon, the county seat of Skagit County, Washington. Prominent local features are identified as follows: 1) Padilla Bay, 2) Swinomish Channel, 3) March Point, 4) Anacortes, 5) Guemes Island, 6) Hat Island, 7) Samish Island, 8) Bay View State Park, 9) Saddlebag Island State Park, and 10) Bayview Community.

The proposed sanctuary's southern boundary is the Burlington Northern Railroad right-of-way, which is located parallel to State Highway 20. Surrounding the proposed eastern boundary, which is approximately eight miles long, is agricultural land, the Bayview residential area, Bay View State Park, and the unincorporated Bayview Community. The northern boundary is Samish Island, a high bank residential area. Part of the northern boundary is located 500 feet south of the south shoreline (meander line) of Samish Island. The western boundary is open water that includes the Swinomish Channel and open water to the San Juan Islands. The southern part of the western boundary is located consistent with the "claimed" Swinomish Indian Tribal Community boundary. The northern part of the boundary is the "seaward boundary," established in 1931 by the State Commissioner of Lands, and the western boundary of Saddlebag State Park.

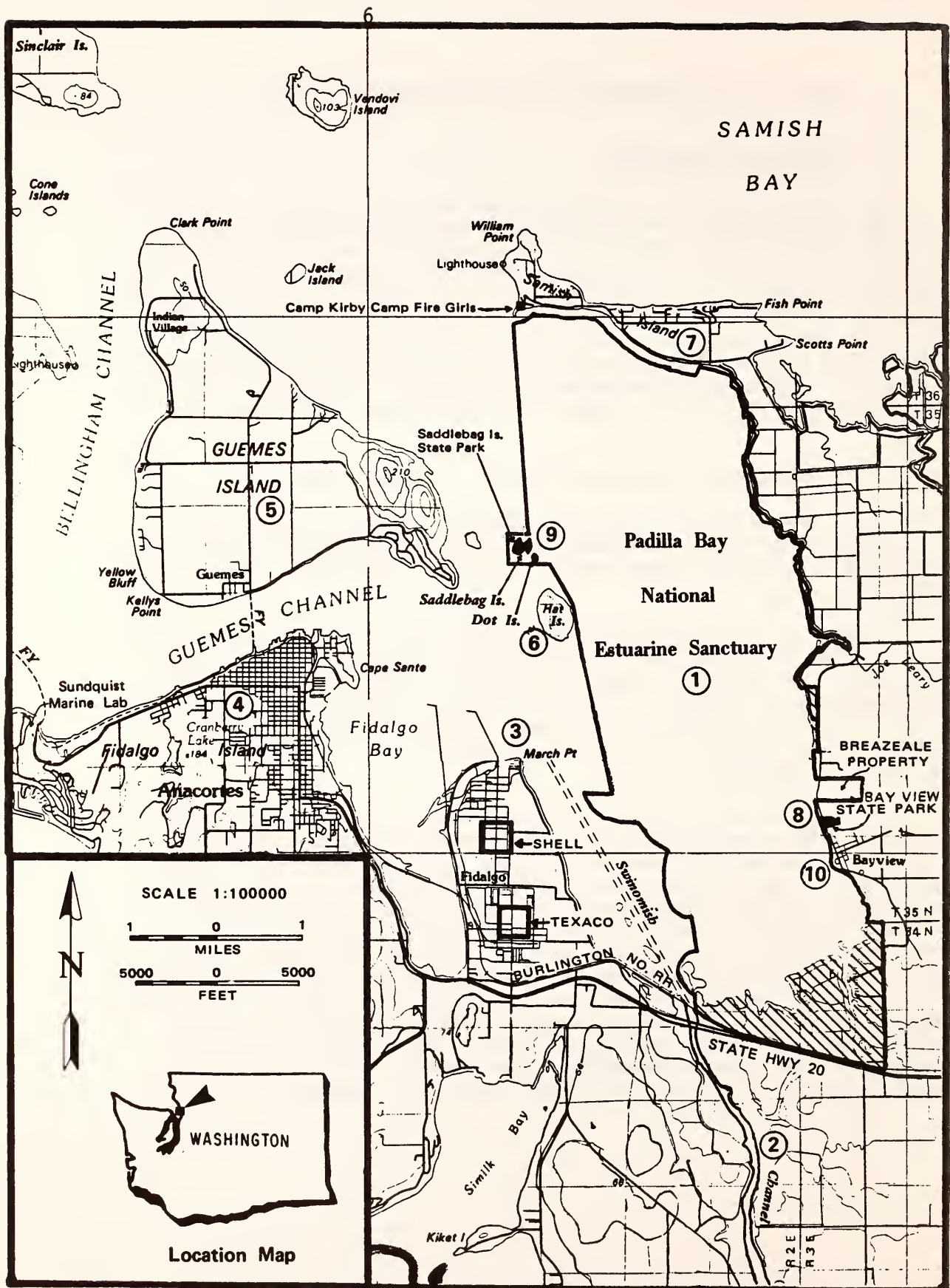


FIGURE 1. Padilla Bay National Estuarine Sanctuary, Skagit County, Washington

The tidelands were first purchased from the State in 1906. A subdivision of the tidelands was accomplished in 1931 when Padilla Bay tracts were established by Court Case No. 13653 from the survey map created by State Field Engineer Edward C. Donn.

There are four basic groupings of real property within the proposed project: 1) the Padilla Bay tracts, 2) Associated Oyster Lands, Inc., 3) Padilla Bay multiple ownerships, and 4) upland areas. The Padilla Bay tracts are a total of 846 tracts extending from the northern part of the project to the southern part of the project. Ownership according to tidal reports comprised the second class tidelands that lie between the meander line and the line of extreme low tide. The Padilla Bay tracts are numbered as follows: beginning with number one at the west tip of Samish Island and continuing with a consecutive numbering to a point south of Bayview, where the last tract number is 846. Most tracts have a baseline distance following the government meander line of approximately 63.64 feet. Each tract is a thin, triangular strip of tidelands with a surveyor's control point where all 846 tracts converge.

The second class tidelands extend between the meander line and mean low water line and vary in distance from two to three miles. The size of the tracts vary; for example, tract one is approximately 12,814.67 feet long and consists of 9.37 acres, while the longest tract (number 220) is approximately 17,200 feet in length and consists of approximately 11.6 acres.

The tracts are completely submerged at high tide and have no legal or public access to the uplands, which are under different ownership. The major portion of the property is exposed at low tide with a water depth of one or two feet over the remainder. There is not direct access to the property by public road. Legal access is only by water. The higher land on a bank varying from 10 to 100 feet in height overlooking the bay is mostly used for occasional single family residential or private recreational use. The low flat upland area abutting the project is used for agricultural purposes, with little likelihood of a change of usage in the foreseeable future.

The Associated Oyster Lands, Inc., was also platted in 1930 and includes 930 acres of tidelands in the southwest portion of the proposed project. There are 943 tracts in this platted area with approximately 350 individual owners. Each tract is approximately one acre in size, is a thin triangular strip, and is 6 feet wide at the baseline and approximately 14,600 feet long. These tidelands do not begin at the meander line, but rather are extended seaward, leaving one or more tideland ownerships between the tract and the uplands.

A third triangular shaped tideland tract and multiple ownership tracts of irregular sizes lie between Padilla Bay tracts and the Associated Oyster Lands, Inc. This unplatted tract, like Associated Oyster Lands, has other tidelands between the meander line and the tract baselines.

The upland area consists of 3 specific areas that are identified as follows: a) a 16 acre tract located on the project's eastern boundary approximately 300 feet south of the Joe O'Leary Slough (see Figure 1--stripped area); b) a 64 acre tract identified as the Breazeale property located on the project's eastern boundary approximately 1,500 feet south of Joe O'Leary Slough; and c) approximately 1,243 acres that make up the entire southern end of the proposed project area (see Figure 1--stripped area). This area is a combination of tidelands and upland agricultural area.

The 9,956 acre tideland area is to be acquired in fee simple or by way of negotiated easements. The 64 acre Breazeale property is currently in State (Game Department) ownership, as are 34 acres in the Telegraph Slough area in the southern upland portion of the project. The upland areas will be acquired through negotiated easements.

2. Management

a. Management Plan

The specific management policies developed for the Padilla Bay Estuarine Sanctuary will include that area within the management boundary, which is the sanctuary boundary except for Bayview and Saddlebag State Parks, as indicated in Figure 1. The management policies will be based on the primary objective of managing the tidelands and uplands within the sanctuary to maintain their ecological integrity to ensure the long term protection of the natural processes and resources for research, education, and recreation.

Uses that are compatible with the intent of establishing the sanctuary, however, will be allowed if consistent with local, State, and Federal statutes. Uses that would destroy or alter the nature of the ecosystem will not be allowed within the sanctuary.

The sanctuary Steering Committee will have the formal role of approving the management concept. Therefore, the Estuarine Sanctuary Management Plan will be formulated according to policies and rules established by legislation--existing or new--and the decisions and policy direction of the Steering Committee.

The combination of tidelands and uplands within the sanctuary boundary represents the major components of the viable ecosystem; however, some activities or uses beyond the boundary of the sanctuary could significantly affect the ecology of the sanctuary. Of particular importance are activities that take place on the Swinomish Indian Tribal community industrial area, activities within the Swinomish Channel area, the water discharge from agricultural lands, and the potential impact of the adjacent industrial

area. Existing local and State statutes and regulations appear fully adequate to address any potential problems resulting from these uses in adjacent water or lands. In addition, because of the support provided by representatives of government and the private sector, who comprise a majority of the members of the Steering and Technical Committees, it is anticipated that these jurisdictions will administer their programs or responsibilities in a manner that will not jeopardize the integrity of the sanctuary. Designation of the sanctuary would not, therefore, result in the need for new or additional regulations in these areas. In this manner, it will be possible to maintain a sanctuary and achieve its objectives while continuing to use the area as a multiple use resource, i.e., research, education, and recreation.

Three major requirements are identified herein in order to maintain the integrity of the sanctuary ecosystem.

1. The maintenance of sufficient quantities of water inflow (from existing agricultural lands), which is comprised of overland drainage, mostly delivered at appropriate seasonal and annual levels to maintain the natural ecological system.

2. The maintenance of water quality by the prevention of significant degradation of sanctuary waters. The existing authority under the State Shoreline Management Act identifies the shorelines of the sanctuary as "shorelines of statewide significance," and therefore, places a special emphasis on the use and protection of the shorelines.

3. The prevention of physical alterations through dredging and filling. Mineral extraction, waste discharge or disposal, and any type of agriculture suggested for the sanctuary would not be allowed if these activities would significantly alter the hydrographic patterns, ecological productivity, or surface area of the bay. Again, existing authorities under the State Shoreline Management Act are adequate to provide the necessary protection.

Within the context of the existing statutes and the policy direction from the Estuarine Sanctuary Steering Committee, the following specific policies apply to the general management of the sanctuary.

Allowed Uses:

- 1) Recreation and commercial fishing, shellfish harvest, and hunting subject to current fishing and hunting regulations.
- 2) Education programs as approved by the Sanctuary Steering Committee.

- 3) Research programs approved by the Sanctuary Steering Committee.
- 4) Recreation as approved by the Sanctuary Steering Committee except that recreation activities allowed at Bayview and Saddlebag State Parks will be determined by the State Parks Commission.
- 5) Continuation of existing shellfish, fish, or vegetation rehabilitation programs.
- 6) Navigation and maintenance dredging of existing channels.

Prohibited Uses:

- 1) Expansion of existing channels or creation of new navigation channels unless specifically authorized by statutes.
- 2) New public works and/or projects that require dredging and filling.
- 3) Significant alteration of water flow patterns including circulation patterns within the bay.
- 4) Any activity that will lead to significant degradation of water quality and biological productivity.
- 5) Dumping of dredging spoils.

b. Administration of the Sanctuary

As a major landowner in the vicinity of the sanctuary and as a landowner within the sanctuary boundaries, the State Department of Game will be the manager for the land and waters of the proposed estuarine sanctuary. The agency will be responsible for the day-to-day administration of the sanctuary.

To assist the Department of Game with this task, the Padilla Bay Estuarine Sanctuary Management Committee will serve as a vehicle for the consideration and approval of recommendations to the agency for the management activities.

The Department of Game will be responsible for employing, training, and supervising sanctuary personnel, who will be trained in the resource management, planner, and biology fields. The duties and responsibilities of agency sanctuary personnel will include but not be limited to:

- 1) Serving as staff to the Sanctuary Management Committee.
- 2) Administration of the sanctuary, including preparing required State, Federal, etc., grant applications, proposals, budgets, and reports, and managing the necessary administration records.
- 3) Representing the agency and Sanctuary Management Committee, as directed, in public hearings and meetings.
- 4) Advising and coordinating units of government on particular issues, questions, or projects, and their impacts on, or relationship to, the sanctuary as directed by the agency and Sanctuary Management Committee.
- 5) Coordinating all research activities within or related to the sanctuary and interpreting the applied research results to produce benefits of a general nature.
- 6) Developing an oversight of the educational program for the sanctuary.
- 7) Coordinating the recreation program, where appropriate for the sanctuary.
- 8) Coordinating and taking appropriate action on all projects or activities that might affect the sanctuary.

The sanctuary manager will be hired by and held accountable to the State agency.

c. Sanctuary Management Committee

In order to provide for effective coordination and cooperation among all interests involved with the sanctuary program, a Sanctuary Management Committee will be established.

The committee will have ten members with a majority being local citizens. The composition of the committee will include representatives from State and local government, elected officials, and knowledgeable and qualified persons from the research, educational, and recreational community.

Committee memberships shall include: one member of the Board of Skagit County Commissioners; one representative of the Department of Ecology, appointed by the Director of Ecology; one representative of the State Department of Game, appointed by the Director of Game; one representative of the National Oceanic and Atmospheric Administration; and

six citizens who reside in Skagit County who shall be appointed by the Chairman of the Board of Skagit County Commissioners, including one member from the educational community, one member from the research community, and one member from the recreation community.

Terms of the committee members will be staggered in length of time for the first term except that representatives from the Department of Ecology, Game, and NOAA are ongoing positions and the County Commissioner shall serve during his term of office. Therefore, the six citizen members shall serve as follows: citizen #1 for a one year term (July 1, 1981 - June 30, 1982); citizen #2 - for one year (July 1, 1981 - June 30, 1982); citizen #3 - for two years (July 1, 1981 - June 30, 1983); citizen #4 - for two years (July 1, 1981 - June 30, 1983); citizen #5 - for three years (July 1, 1981 - June 30, 1984); and citizen #6 - for three years (July 1, 1981 - June 30, 1984). Thereafter, all terms of committee membership shall be for three years except for committee membership appointments that are made to fill a vacant position. Such appointments shall be made to fill the remainder of the vacant term.

In addition, three subcommittees may be formed by the Management Committee as needed to make impact and input into the Sanctuary Management Committee regarding the research, education, and recreational programs.

The Sanctuary Management Committee will serve in a variety of ways, including both advisory and policy making, and may make recommendations to the agency, through the Director of the Department of Game, that will include, but not be limited to:

- 1) Reviewing and advising the agency on administration of the sanctuary. In this role, the committee will:
 - a) Review the sanctuary manager job specifications and qualifications prior to approval;
 - b) Review applicants for the sanctuary manager position and recommend personnel to the agency, for their consideration, prior to final selection; and
 - c) Recommend the sanctuary operating and capital budget programs.
- 2) Recommending sanctuary procedural guidelines for the operation of the sanctuary.
- 3) Reviewing proposals for research, educational, and recreation activities in the sanctuary lands and waters.
- 4) Reviewing the sanctuary management plan annually.

- 5) Reviewing and advising the appropriate Federal, State, and local governmental agency of proposed actions, plans, and projects in, adjacent to, or affecting the sanctuary. These include:

- a) Review of A-95 projects;
- b) Review of the regional impact of dredge and fill requests;
- c) Waste discharge permits;
- d) The lease and sale of state owned lands; and
- e) Rules for aquatic preserves programs.

The Sanctuary Management Committee will meet at least once a month during the first year following the award of the sanctuary grant. Thereafter, the committee shall determine the frequency of its meetings.

d. Research Policy and Program

The major research recommendations for the proposed estuarine sanctuary were generated by the Padilla Bay Estuarine Sanctuary Technical Committee--Research Subcommittee, approved by the full Technical Committee and adopted as the Estuarine Sanctuary Research Policy and Program by the project Steering Committee.

An estuary is that part of a river or stream having an unimpaired connection with the open sea, where the sea water is measurably diluted from freshwater derived from land drainage. Historically, Padilla Bay was a true estuary, part of the large Skagit River delta; however, the bay is no longer connected to the Skagit River system, and at present has only freshwater inflow from land drainage. Padilla Bay is without question a prime area for a sanctuary, set aside to provide scientists and students the opportunity to examine, over a period of time, the ecological relationships within the area. Although some measurable human disturbance such as channel dredging and diking land reclamation has occurred to Padilla Bay and continues, the bay as a natural ecosystem largely remains intact and in a natural state.

Consideration was given to the existence of two excellent marine laboratories that are located in the general vicinity of the proposed sanctuary: Western Washington University's Sundquist Marine Studies Laboratory, at Anacortes; and the University of Washington Friday Harbor Laboratory, located in the San Juan Islands. These two facilities provide a wide range of research opportunities and can provide adequate support facilities for the Padilla Bay Research Program.

The primary purpose of estuarine sanctuaries is the long term maintenance of ecosystems for scientific and educational purposes. However, the Estuarine Sanctuary Guidelines states that "Multiple use of estuarine sanctuaries will be encouraged to the extent that such use is compatible with the primary sanctuary purpose." It is clear that long term protection for research and education does not mean the exclusion of all human activities; however, it is equally clear that any activity destructive to the Padilla Bay natural ecosystem is not compatible and must be prohibited.

Instead of a specific list of permitted and prohibited uses, which are identified in the management plan, the following guidelines are compatible with the proposed research program:

- 1) All current uses of Padilla Bay Estuarine Sanctuary Management Area should be allowed to continue until such time as a management authority determines that a given activity is destructive to the sanctuary based on site-specific scientific data.
- 2) Any new activity proposed in the management area should require an environmental assessment based on scientific data and sanctuary management approval prior to being allowed.

In this manner, the public sector will enjoy maximum multiple use benefits from the sanctuary while, at the same time, deriving the scientific and educational benefits from an estuary that is preserved forever for public use.

An interpretative center, which is proposed for the Game Department Breazeale property located on the east shore of the sanctuary, will include support facilities for field studies in cooperation with the university programs noted above. In addition, the intent and purpose of establishing an interpretative center are to:

- 1) Complement and fill identified research voids in programs that cannot be provided by existing facilities and/or programs.
- 2) Provide an opportunity for private and public bodies to study, analyze, and interpret the ecosystems and biological characteristics in the Padilla Bay area in particular, and the north Puget Sound area in general.
- 3) Establish an on-site centralized public use facility for research-educational programs that will provide an opportunity for a better understanding of the importance and value of estuarine systems and their management needs for citizens, schools, and public and private organizations.

A listing of all research programs known to have taken place in Padilla Bay is provided in Appendix II. Although this is a fairly long list, it is clear that only the marine birds have received long term quantitative study. Mammals, fish, and marine benthos (the flora and fauna of the sea bottom) have received only short term study while the epibenthos, plankton, and associated wetland benthos have received no study at all. Especially noteworthy is the absence of productive studies: e.g., energy flow studies, food web studies, or an attempt to treat the Padilla Bay ecosystem as an integral whole.

Beyond these biotic studies, little or no work has been done on the abiotic Padilla Bay system (e.g., studies of Beach Bay sediment, geomorphology, or physical and chemical oceanography of bay water) and on the human impacts on or perturbation of the bay, including dredging for channel maintenance; harvest of birds, fish, and shellfish; municipal and industrial water pollution; and agricultural runoff pollution.

In spite of the major gaps in the existing data for Padilla Bay, it is clear that the bay is a highly productive area that supports a diverse and complex community of organisms.

As set forth in §315 of the CZMA, estuarine sanctuaries are "...to serve as natural field laboratories in which to study and gather data on the natural and human processes occurring within the estuaries of the coastal zone." To facilitate development of this natural field laboratory, the following research plan in outline form is proposed.

I. Natural Processes

A. Biotic

1. Ecosystem Structure

- a. Marine Mammals
- b. Marine Birds
- c. Fish
- d. Epibenthos
- e. Benthos
- f. Plankton

2. Ecosystem Function

- a. Energy flow
- b. Role of top carnivores (keystone species) in maintenance of community structure. Determine by inclusion and exclusion caging studies.

- B. Abiotic
 - 1. Water
 - 2. Sediment
- II. Human Processes: Environmental and Economic Effects of the Following Should Be Determined.
 - A. Water Pollution
 - B. Shore and Bay Bottom Modification
 - C. Animal Harvesting
 - D. Nonconsumptive Recreational Uses: boating, beach walking, bird watching, etc.

It is clear that a research program of this magnitude could not be funded by a single agency or at a single time. It is essential, therefore, that the major duty of the Padilla Bay Estuarine Sanctuary Managing Agency and Management Committee should be the implementation and coordination of the research program. The following list would be a starting point for support of the research program.

List of Potential and Committed Research Organizations and Research Funding Sources--Private and Public:

National Marine Fisheries Service
 U.S. Fish and Wildlife Service
 National Science Foundation
 Army Corps of Engineers
 National Oceanic and Atmospheric Administration
 University of Washington
 Western Washington University
 Huxley College of Environmental Studies
 Washington State Department of Game
 Washington State Department of Fisheries
 Washington State Department of Ecology
 Washington State Department of Natural Resources
 City of Anacortes
 Shell and Texaco Oil Refineries
 Skagit Valley College
 Swinomish Indian Tribal Community

A complete copy of the research plan is provided in Appendix II.

e. Education Policy and Programs

The educational program element of the Estuarine Sanctuary Program was initiated by the Padilla Bay Technical Committee--Educational Subcommittee, approved by the full Technical Committee, and adopted by the Steering Committee as the Padilla Bay Estuarine Sanctuary Education Policy and Program.

This education program is designed to generate both public interest in the value of the environment and a better understanding by the public of the short term and long term programs that are initiated by CZM decisionmakers to utilize, protect, restore, and preserve the State's environment and shorelines.

Experience and knowledge of educational practices based on research indicates that learning about natural resources, conservation, scientific, social, and technological topics cannot be limited to verbal discourse. Many of the physical activities associated with this learning must be accomplished beyond the home or classroom. This kind of education requires that educators extend learning experiences into the community.

The potential of the proposed Padilla Bay Estuarine Sanctuary to provide a unique educational opportunity as a learning resource for both formal educational programs and for nonformal interpretative or public informational education opportunities is unparalleled in the State of Washington.

With the opportunity of utilizing the Padilla Bay environment as a learning resource, achievement in some measure of the following goals is a primary intent:

- 1) An accurate and comprehensive grounding in how the estuarine environment works.
- 2) Experience in valuing environmental quality.
- 3) Experience in how personal choices and actions affect environmental quality.
- 4) Experience in methods of enacting community responsibility.

The plan for accomplishing these objectives consists of four major systems: the governance system is composed of decisionmaking structures that legitimize activities and government; the substantive system is composed of the content and process of learning, and deals with the definition of what is learned and how it is learned; the development system is a cyclical, sequential approach to the construction and testing

of necessary program materials and instructional strategies for both formal and nonformal educational endeavors; and the delivery system provides a thoughtful analysis of the requirements and strategies essential for long term operation and support of the proposed Padilla Bay Education Program.

It is the intent of DOE to use this environmental education plan as a guideline to establish an environmental education link between the general public (individual citizens; recreational, environmental, and social groups, etc.; and clubs and organizations) and institutions of learning (universities, common schools, governmental agencies, etc.). This will be accomplished through organized instruction classes, lecturers, interpretative displays, and programs, field trips, etc., in order to produce an educational harmony regarding the environment.

The total environmental education effort will be directed toward a better understanding of who we are and how we relate to our environment, and why an understanding of this relationship is essential to human existence.

This educational program approach will provide a vehicle for increased public knowledge and awareness of the complex nature of estuarine systems, their value and benefits to man and nature, and the problems confronting them.

The complete Padilla Bay Estuarine Sanctuary Educational Program is provided in Appendix III.

f. Recreation Policy and Program

The recreational program element of the Estuarine Sanctuary Program was initiated by the Padilla Bay Technical Committee--Recreation Subcommittee, approved by the full Technical Committee, and adopted by the Steering Committee as the Padilla Bay Estuarine Sanctuary Recreation Policy and Program, with the additional requirement that all current uses (recreational) that now exist in Padilla Bay will continue once the sanctuary is established.

The recreational program was approved consistent with the following:

- 1) NOAA Estuarine Sanctuary Guidelines--Multiple Use Requirements.
- 2) Padilla Bay's geographical and physiographical setting.
- 3) Results of the 1976 Skagit County Recreational Survey.

- 4) The Steering Committee's policy, regarding continuation of existing (recreational) uses within the established sanctuary.
- 5) Recommended location of estuarine sanctuary recreation viewpoints.

NOAA's Estuarine Sanctuary Guidelines state that while the primary purpose of estuarine sanctuaries is to provide long term protection for natural areas so they may be used for scientific and educational purposes, multiple use of estuarine sanctuaries will be encouraged to the extent that such use is compatible with the primary sanctuary purpose. The capacity of a given sanctuary to accommodate multiple uses, and the kinds and intensity of such uses, will be determined on a case-by-case basis. While it is anticipated that compatible uses may generally include activities such as low intensity recreation (i.e., fishing, hunting, boating, non-commercial taking of shellfish, wildlife conservation, commercial fishing, etc.), it is recognized that the exclusive use of a specific area for scientific or educational purposes may provide the optimum benefit to coastal zone management and resource use, and may, on occasion, be necessary.

Padilla Bay's geographic and physiographic setting has defined its recreational use both in terms of kinds of recreational use and use intensity. Access constrained both by substantial steep bank shorelines and extensive exposed tidelands at low tide periods is the major factor limiting recreational use and is primarily responsible for the bay's present intactness. The bay's location at the gateway to the San Juan Islands has also contributed to its preservation, due to other available opportunities that draw recreationists away from the bay.

The 1976 Skagit County Recreational Survey, which was used to develop the sanctuary recreation program, was cosponsored by the Skagit County Recreational Development Association, Skagit County, the Washington State University Cooperative Extension Service, Skagit County Planning Department, Skagit County Park Board, and the Skagit County Board of Commissioners.

The Padilla Bay Estuarine Sanctuary Steering Committee adopted a policy on October 4, 1979, requiring that "all (legal) existing (recreational) uses that now occur in Padilla Bay shall continue once the estuarine sanctuary is established."

There are limited opportunities for public use of Padilla Bay shoreline with the exception of March Point and Bayview State Park. Saddlebag Island is inaccessible to the majority of the people, as are the agricultural and residential areas on the proposed sanctuary's south,

east, and north boundaries. Expanded public use of the shoreline, especially on the mainland, would be a desirable component of estuarine recreational plan development.

A complete copy of the recreation program is provided in Appendix IV.

B. Alternatives Considered

1. Funding

Without Federal assistance, the State of Washington by itself could not purchase all of the area proposed for acquisition. Although the sanctuary proposal has received extensive State and Federal review as it developed, no other agency has expressed the ability to provide funding for acquisition. Moreover, even if other funding sources were available, they would not meet the explicit needs and objectives of the Estuarine Sanctuary Program.

Because the Estuarine Sanctuary Program is basically one of Federal response to State initiatives, the alternatives for Federal action are limited. OCZM could accept the application as presented or request modification but award a grant in either case, or it could refuse to accept the application and decline the grant. OCZM has worked with the State of Washington since it first indicated interest in the Estuarine Sanctuary Program, and OCZM's input has caused some modification of the proposal.

The basic difference between the proposed action and "no action" is the degree of protection afforded. The proposed action insures a high degree of protection by preserving the natural functioning ecosystems and environmental quality from destructive intrusions in the form of diking, dredging, filling, chemical discharges, and major disturbances from human activity. Because the existing controls are thought to be inadequate to fully ensure the ecological integrity of Padilla Bay estuary (and its rich and unique wildlife assemblages), the no funding alternative is less beneficial than that of creating an estuarine sanctuary.

Delay of the grant would permit other States within the Columbian classification to develop estuarine sanctuary proposals for submission to NOAA. However, the States are not in direct competition for designation of a single sanctuary, and the award of a grant does not preclude other grants in the same region if an appropriate subcategory is identified.

Unless the application lacked merit, the outright refusal to award a grant would serve no purpose. Indeed, in view of the widely acknowledged need for estuarine preservation (for example, the National Estuary Study, 1970, and Ketchum, 1972), such action would be contrary to the public interest.

2. Site Selection

The State of Washington performed a very intensive site selection process. The result was that Padilla Bay was an outstanding candidate for National Estuarine Sanctuary status. The interested reader is referred to Appendix V for a description of the site selection process.

3. Boundaries

The Steering Committee considered a wide range of boundaries during the yearlong planning process. The boundaries proposed represent an area that approximates an ecological unit for estuarine sanctuary purposes and at the same time recognizes that industry and agriculture coexist in the same area. The most notable change from the originally proposed boundary is the 500 foot buffer strip at the north end of the sanctuary, adjacent to Samish Island. This 500 foot buffer was added so that uses by the public would not affect the property owner's quiet enjoyment of his land.

A major alternative to the proposed boundaries was considered by the Steering Committee, but rejected. This boundary alternative would basically be to draw a straight line from March Point, north, to the western end of Samish Island, including the western 100 acres of Samish Island. The major basis for rejection was that a large portion of the land in the expanded boundaries is claimed by the Swinomish Indian Tribal Community and that a lawsuit is currently being prepared. It is expected that this suit could be in litigation for 4-5 years and NOAA might be drawn into the suit if the additional acreage were included within the proposed boundaries. Also, the estimated cost of Hat Island, which would be included in this area, is \$600,000 and the estimated cost of the 100 acres on Samish Island is \$1,500,000--both beyond the reach of OCZM and State acquisition.

4. Alternate Methods of Acquisition and Protection

Washington, during the development of its application, examined a variety of possible funding sources and alternative methods of protection. These possible sources included:

Federal Acquisition

Pittman-Robertson Fund
Dingell-Johnson Act
Migratory Bird Conservation Fund
Land and Water Conservation Fund
Estuarine Sanctuary Program

State Acquisition

Legislatively Appropriated
Interagency Committee for Outdoor Recreation (IAC)

Washington annually receives funds from the Pittman-Robertson Fund and the Dingell-Johnson Act. However, these funds are used for wildlife habitat restoration and fish habitat restoration, respectively. These funds generally are used for manipulative management programs, which would not be entirely compatible with sanctuary objectives. Similar considerations apply to the Migratory Bird Conservation Fund, as the objectives are somewhat different from those of the project proposed. The Land and Water Conservation Funds are generally appropriated for projects that provide more recreational uses of the land than is envisioned within the sanctuary.

The State Legislature and the Governor on a case-by-case basis appropriate funds for land acquisition. Therefore, unless the funds were appropriated for Padilla Bay, other State funds could not be used. It should also be noted that Congress, during the passage of the Coastal Zone Management Act of 1972, intended the sanctuaries program not to duplicate existing Federal acquisition programs.

5. No Action

Under this alternative, Padilla Bay would not be acquired as an estuarine sanctuary.

This alternative would leave the future of Padilla Bay with various regulatory bodies attempting to protect the area under existing authority, with no planning for research, education, or recreation. Future development could lead to a deterioration of the ecological values of one of Washington's last remaining relatively natural estuaries. The effect on the endangered species and the indigenous fish and wildlife could be very harmful under the no action alternative.

The Padilla Bay estuary has the most extensive eelgrass beds in North America. The eelgrass beds, expansive tideflats, and fringing salt marshes support large concentrations of shorebirds and waterfowl (33 species) including the Pacific or black brandt for which the bay is a strategic staging area in the Pacific flyway. Adjoining delta lowlands, as well as marshes and tideflats, are important foraging and wintering grounds for several species of hawks and owls, including the endangered American peregrine falcon and the threatened bald eagle. This area is believed to support the largest known wintering population of American peregrine falcons in North America: approximately 10 to 12 individuals. This may make Padilla Bay and the adjacent flats an area of national concern.

As mentioned previously, unless there are serious defects in the application, the no action alternative would be contrary to the State and Federal goals of preserving representative estuaries within the coastal zone of the United States.

PART III: ENVIRONMENTAL CONSEQUENCES

A. Environmental Impacts of the Proposed Action

1. General Impacts

The overall impact of establishing the State's proposed estuarine sanctuary would be environmentally beneficial. Social and economic impacts would be both beneficial and adverse to some degree.

The proposed sanctuary would entail minimal development or physical alteration of present environmental conditions. It would not substantially change present activities or uses in or adjoining the proposed sanctuary area. Although a variety of regulatory programs currently exist at local, State, and Federal levels, they are not believed to be adequate to guarantee the preservation of these unique wildlife ecosystems. The effect of establishing an estuarine sanctuary would be to ensure long term protection for significant population segments of an endangered species (American peregrin falcon), a threatened species (bald eagle), and other wildlife species of concern (black brant, ducks, shorebirds, raptors, harbor seals, and others).

In addition, the sanctuary would preserve the integrity of Padilla Bay against possible destruction of large areas of eelgrass, marsh, and intertidal habitats by major diking, dredging, or filling projects, such as have previously been proposed for Padilla Bay. Sanctuary status would ensure long term natural productivity and continued ecosystem functioning of a significant portion of the scarce and diminishing estuarine habitat remaining in the Pacific Northwest.

Creation of the proposed sanctuary might result in some future modification of present patterns of waterfowl hunting and other recreational activity. This might be done to accommodate new programs for enhancing research and educational/interpretative uses and to provide for the needs of sensitive wildlife species. However, access and overall availability of waterfowl hunting opportunity would not be reduced. Public hunting would instead be increased by habitat improvements south of Padilla Bay and by opening more areas for public hunting. While public use of the area would generally increase, it may be guided to selected areas and the type and intensity of use regulated.

A detailed, cooperative management plan would be developed with the Department of Game to provide for safe and compatible use of the entire area for a variety of consumptive and nonconsumptive wildlife-oriented recreation activities. This plan would incorporate measures to prevent

trespassing, littering, and intrusions into fragile areas that could be harmed by unrestricted human use. Activities within much of Padilla Bay would be regulated in accordance with State regulations governing allowable and prohibited uses within estuarine sanctuaries and public hunting clubs. The present types and level of activity would be retained within Samish Bay and flats.

Landowners in the upland areas and the south, east, and north boundary upland areas would be unaffected. Upland areas in the southern part of the proposed sanctuary would be acquired through conservation easements or leases without significant changes taking place in the character of current use, which is mainly agriculture. However, the easement or lease agreements would incorporate provisions precluding substantial commercial development, housing subdivisions, etc. and may include specific agreements to preserve roosting areas, small marshes, or other essential habitat parcels.

2. Local Impacts on Skagit County

The proposed action would not involve significant development or alteration of natural or existing conditions and habitats. As such, no environmentally adverse impacts are expected, so that mitigating measures are not needed. Landowners affected by this proposal would receive fair market value for their holdings. Whether fee title acquisitions or easements are entailed, it is assumed that economic impacts to private parties are compensated in the transactions.

The 1979 tax receipts by Skagit County for the area within the proposed boundaries was \$2,133. Although this \$2,133 might be considered an economic loss, there are several factors that indicate the sanctuary might generate more income than is lost. The dollars devoted to management (possible \$70,000 a year or more) will be spent within the county and local communities; and this, in turn, generates more income. This is known as the multiplier effect. Increased public use of the area is expected to generate substantial education, recreation, and tourism related revenue to the economy of the county. Also, the Game Department in 1979 collected \$4,100 in fines for game violations in Skagit County. This money is returned to the county government for its use. These fines could be expected to increase with an increased Game Department presence with the management of the sanctuary.

3. State and Federal Impacts

Acquisition and management of the National Estuarine Sanctuary will have relatively minor shortrun fiscal impacts on the Federal Government and the State of Washington. In addition, the State will be responsible for funding the long term operation of the sanctuary. These expenditures

are expected to be offset by two nonquantifiable benefits: (1) improved scientific and technical knowledge to be applied toward management practices concerning estuarine resources here and in other areas and (2) improved intergovernmental coordination in the bay system as a whole. The sanctuary would also protect wetlands and be in complete harmony with Executive Order 11990, The Protection of Wetlands.

B. Relationship Between Local Short Term Uses of the Environment and the Maintenance and Enhancement of Long Term Productivity

The expressed purpose of the proposed action is to preserve the Padilla Bay ecosystem in perpetuity and to guarantee long time natural productivity to the benefit of a large and diverse assemblage of wildlife and fish species. Regulated harvesting of natural resources would continue, but there would be no short term or exploitative uses at the expense of long time productivity or continued public utilization. By implication, all short term uses that would reduce or eliminate long term productivity would be prevented with the proposed action and intended management.

The proposed action of habitat preservation and resource conservation is conducive to maintaining natural productivity and ecosystem processes with little or no work or subsidy by man. The natural productive efficiency of estuaries is among the highest of all known natural or artificial systems and is virtually irreplaceable (Odum, 1971).

C. Irreversible or Irretrievable Commitments of Resources

No irreversible or irretrievable commitments of resources have been identified in the assessment or are expected to result from the proposed action. No reduction in income to the county would result from loss of agricultural production. A potential adverse impact is the psychological upset to any landowner not willing to relinquish title to his or her property; however, no condemnation will be used. No other adverse, unavoidable environmental impacts are known. No significant construction is anticipated, except for possible education facilities such as an interpretative center, trails, signs, and small upland parking areas at controlled access points. Other than sport and commercial fish, shellfish, and wildlife harvesting, no extraction of renewable or nonrenewable resources would occur. Endangered, threatened, and sensitive species and their vital habitats would be protected, as would any known or discovered archeological or historical sites.

Minor maintenance and energy expenditures would be incurred, as would the expenditure of public funds. These may be regarded as a commitment of economic resources and also as an investment in recreation amenities for the welfare of present and future generations.

D. Possible Conflicts Between the Proposed Action and the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls for the Area Concerned

The location of Padilla Bay, geographically, and the concern by citizen groups and governmental entities for the protection of environmentally valuable areas throughout the State and particularly the State's shorelines has created a degree of protection for areas like Padilla Bay. However, the protective measures are "permissive" acts that have the flexibility of protection for environmental uses and will also allow private use and development under certain acceptable conditions.

Therefore, there are no assurances that environmentally valuable areas will remain undeveloped and available for public use. If other uses occur or are proposed that are not compatible with the environment, but provide a positive impact for the community's economy, industry, etc., approval of these uses is possible.

In the case of Padilla Bay, there is a continued probability of proposals for noncompatible environmental uses occurring, which in part prompted the estuarine sanctuary proposal. The southern boundary, which is a railroad right-of-way boundary line located parallel to a State highway, provides excellent land transportation opportunities. Deep water areas on the western boundary may provide water oriented transportation opportunities, and the existence of industry within the immediate vicinity constantly provides "add on" industrial opportunities that could have a negative impact on the proposed sanctuary area.

To date, several existing controls have been imposed on the contiguous land and water areas, and, although they do not eliminate the possibility of noncompatible uses, they do lessen the possibility by creating and requiring a high level of conditions before their uses are approved. Local controls include, but are not limited to: the county zoning ordinance that identifies Padilla Bay as a marine aquaculture area; and the southern, eastern, and northern boundaries as residential, agricultural, and public use areas. The Skagit County zoning ordinance was adopted by the Board of Skagit County Commissioners on June 11, 1979 (Resolution No. 8003). Copies of the ordinance are available from the Skagit County Planning Department, Mt. Vernon, Washington. Several legislative and planning actions, which provide a specific degree of protection for the total area including Padilla Bay and a contiguous land and water area adjacent to the sanctuary, are identified below, and are contained in Appendix IX. These are compatible with the estuarine sanctuary proposal unless otherwise noted.

1) The State Shoreline and Management Act of 1971. The definition in the Concept section (RCW 90.58.030) of the Shoreline Management Act of 1971 identifies Padilla Bay as a "shoreline of statewide significance" and "Area of Particular Concern," therefore placing emphasis upon the need to protect this specific area consistent with legislative policy.

It is the policy of the State to provide for the management of the shorelines of the State by planning for and fostering all reasonable and appropriate uses. This policy is designed to ensure the development of these shorelines in a manner that, while allowing for limited reduction of rights of the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse affects to the public health, and the land and its vegetation and wildlife, and the waters of the State and their aquatic life, while protecting generally public rights of navigation and a corollary rights incidental thereto.

The Washington State Legislature declared that the interests of all of the people shall be paramount in the management of shorelines of statewide significance. The Department of Ecology (in adopting guidelines for shorelines of statewide significance) and local government (in developing master programs for shorelines of statewide significance) shall give preference to uses in the following order.

- a) Recognize and protect the statewide interest over local interest.
- b) Preserve the natural character of the shoreline.
- c) Result in long term over short term benefit.
- d) Protect the resources and ecology of the shoreline.
- e) Increase public access to publicly owned areas of the shorelines.
- f) Increase recreational opportunities for the public in the shoreline.
- g) Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

In the implementation of this policy, the public's opportunity to enjoy the physical and aesthetic qualities of natural shoreline of the State shall be preserved to the greatest extent feasible, consistent with the overall best interest of the State and the people generally. To this end, uses shall be preferred that are consistent with control of pollution and prevention of damage to the natural environment or that are unique to or dependent on use of the State shorelines.

Permitted uses in the shorelines of the State shall be designed and conducted in a manner to minimize in so far as practical any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water.

The Shorelines Management Act is a comprehensive tool for control of shoreline uses. By designing a use permit system and mandating a solid environmental planning program as its base, the legislature accepts State responsibility for shoreline quality. It becomes "the policy of the State to provide for the management of the shorelines of the State by planning for and fostering all reasonable and appropriate uses."

The Legislative concerns prompting such decisive action are made clear in the following legislative statement:

The Legislature finds that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration and preservation. In addition, it finds that increasing pressures of additional uses are being placed on the shorelines, necessitating increased coordination in the management and development of the shorelines of the state. The Legislature further finds that coordinated planning is necessary in order to protect the public interest associated with the shorelines of this state, while at the same time recognizing and protecting private property rights consistent with the public interest. There is therefore a clear and urgent demand for a planned, rational and concerted effort jointly performed by federal, state and local governments to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines (RCW 90.580.020).

When the sanctuary is established, the uses of the bay will not differ radically from the current uses (1980 State Legislature--Engrossed Senate Bill 3371). Low intensity uses such as recreational fishing, crabbing, shellfish harvesting, boating, hunting, etc., will be continued. Monitoring of these uses will be established in order to identify any damage to the ecosystem's biological integrity, etc. Regulations may be developed consistent with legislative action, Steering Committee policy, or Sanctuary Management Committee direction to prevent a continuation of any damage.

With regard to possible future development of the bay shoreline, the primary potential conflicts relate to the expansion of industrial activities. Under the current provision of the Skagit County Shoreline Master Program, it is possible but unlikely that such conflicts will occur.

Establishing an estuarine sanctuary would be a major impetus to the preservation of Padilla Bay. In the application to NOAA it is stated that "the Department of Ecology will vigorously oppose proposed developments which are inconsistent with the sanctuary management philosophy as identified by Federal, State, and local statutes," and by policies that are adopted by the Steering Committee and the Sanctuary Management Committee. In addition, the Department of Game regards this area as highly significant for waterfowl in the State.

2) Coastal Zone Management Act of 1972 as amended (P.L. 92-583/P.L. 94.370). Washington State's development of a Coastal Zone Management Program under §305 has afforded the State two particularly noteworthy opportunities for increasing the effectiveness of coastal resources management. The first is a new incentive to evaluate, shore up, and coordinate existing State management programs and practices. The second stems from the Act's Federal consistency requirement. This provision offers the State a management tool unavailable under State law. Both achieving internal coordination and the forging of consistent State/Federal management relations are long term goals. The State of Washington has an effective coastal zone management program in effect at the present time that centers on the controls provided in the Shoreline Management Act and that has been augmented over the past year by State activities in response to the CZMA. Copies of this document are available from the Department of Ecology, Olympia, Washington, 98504.

3) The Washington Statewide Outdoor Recreation Plan (SCORP), 1979 is another legislative planning tool that emphasizes the importance of the protection of the land and water areas of the State.

Chapter Three of the SCORP, Issue 12--Wetland and Flood Plains--indicates that it is the intent of the State of Washington to provide opportunities for public use and enjoyment of appropriate segments of wetlands and/or flood plains including their associated shorelines, tidelands, and estuaries, while protecting and maintaining these areas for their value as wildlife habitat and their importance in the hydraulic cycle.

Specific objectives are to work through existing local and State resource management programs to continue to promote and, where feasible, expand:

- a) Public access to shorelands and tidelands of the State;
- b) Conservation of the wetland and flood plain resource of the State;
- c) Development of facilities on wetland and flood plain for water-oriented recreational and/or conservation activities; and

- d) Identification and evaluation of those wetlands and flood plain resources of the State not currently included in the Coastal Zone and Shoreline Master Programs as to their relative importance for resource, conservation, and/or recreational use.

The proposed State policy or solution to the problem of public use of shorelines is identified with the following statement from SCORP:

The State of Washington recognizes that saltwater beaches and tidelands are one of the most popular recreational resources of the State. It is therefore recommended that the appropriate public agencies of all levels of government and the private sector wherever feasible take every possible action to reduce the effect of "checkerboard" ownerships whenever possible that currently inhibit public use and access to saltwater beaches and tidelands.

4) The Washington State Legislature in 1961 passed the following legislation that relates to the protection of lands contiguous to the estuarine sanctuary area (Chapter 190 - Session Laws of 1961. Tidelands in Skagit, Snohomish, Island counties). Summary: The commissioner of public lands shall withdraw from sale or lease, except lease for the production of oysters or for booming or industrial uses: PROVIDED, That the director of Game has approved such industrial uses as not being generally incompatible with the primary function of these lands as public shooting grounds. The full text of this statute is provided in Appendix IX.

5) The Skagit County Shoreline Management Master Program. On June 7, 1976, the Skagit County Planning Commission approved, certified, and adopted the text of the Shoreline Management Master Program of Skagit County. The Board of County Commissioners adopted the Planning Department's Shoreline Management Master Program on June 29, 1976.

The Shoreline Management Master Program goals include a 9 goal statement pursuant to the program elements specified in RCW 90.58.100(2). These goals were devised, reviewed, and adopted by the Skagit County Citizens Advisory Committee in order to provide an overall, comprehensive foundation and sense of direction on which the policies, regulations, shoreline area designations, and administrative procedures would be based. These goals will provide overall guidance for the management of the shorelines of Skagit County. They are:

- a) Shoreline use - To allow for compatible uses of the shorelines in relationship to the limitations of their physical and environmental characteristics. Such uses should enhance rather than detract from, or adversely affect, the existing shoreline environment.

- b) Conservation - To preserve, protect, and restore the natural resources of Skagit County's shorelines in the public interest and for future generations. These natural resources include, but are not necessarily limited to, fish, wildlife, vegetation, and natural features found in shoreline regions. Only renewable resources should be extracted and only in a manner that will not adversely affect the shoreline environment.
- c) Public access - To provide safe, convenient, properly administered, and diversified public access to publicly owned shorelines of Skagit County without infringing on the personal or property rights of adjacent residents. Such access should not have an adverse impact upon the environment.
- d) Circulation - To permit safe, adequate, and diversified transportation systems that are compatible with the shorelines, resulting in minimum disruptions to the shoreline environment.
- e) Economic development - To promote and encourage the optimum use of existing industrial and economic areas for users who are shoreline dependent and shoreline related and can harmoniously coexist with the natural and human environments; and, subsequently, to create similar areas as need arises with minimum disruption of the shorelines.
- f) Recreation - To encourage the provision and improvement of private and public recreation along the shorelines of Skagit County only to the extent that the environment is not impaired or degraded.
- g) Historical/Cultural/Educational - To identify, protect, and restore those shoreline areas and facilities that are of historical, cultural, or educational value. Public or private organizations should be encouraged to provide public access to and protection of such areas and facilities.
- h) Restoration and Enhancement - To restore and enhance those shoreline areas and facilities that are currently unsuitable for public or private access and use.
- i) Implementation Process - To provide an efficient system for shoreline permit applications that would eliminate unnecessary duplication of effort or jurisdictional conflicts, yet assure complete coordination and review. To provide a process to periodically update the inventory, goals, policies, and regulations to achieve responsiveness to changing attitudes and conditions.

6) Swinomish Indian Tribal Community Plans. Although ownership is disputed by the State, the Swinomish Tribe claims about 20 acres of intertidal land in southern Padilla Bay. About 40 acres were filled with dredge material in 1975 for development of a "port industrial park." As recently as March 1979, the tribe announced plans to develop 176 acres for a "multimillion dollar marine and industrial park" (Skagit Valley Herald, March 27, 1979). Reservation or tribal properties are excluded from management under the local master program, Shoreline Management Act, and CZM Program.

Any project of this nature within Padilla Bay is subject to Federal permits and if Federal dredging or funding assistance is involved in any project on tribal land (as was the case previously), Presidential Executive Order 11990 on Protection of Wetlands (dated May 24, 1977) would apply. Nevertheless, a massive project of this nature could significantly compromise the ecological integrity of the bay in direct and irreversible fashion. It could introduce greater pollution as well as disturbances incompatible with the proposed estuarine sanctuary and probably stimulate further industrial and secondary development in and around the bay.

7) Federal Permit Program. The principal Federal Permits involved are Sections 9 and 10 of the Rivers and Harbors Act of 1899, administered by the Corps of Engineers, and Section 404 of the Federal Water Pollution Control Act (as amended 1972), which is administered by the Corps with Environmental Protection Agency oversight. These permits are subject to review in accordance with the Fish and Wildlife Coordination Act (as amended in 1958) and the 1967 Memorandum of Understanding between the Departments of Army and Interior. Section 9 governs dikes, and Section 10 governs all other construction and activity waterward of the mean high water line. Section 404 applies to discharge of dredge or fill material in water of the U.S., including wetlands above the mean high water line. Each of the permits is covered by issuing agency regulations and wetlands policies.

The Coordination Act requires consultation by the permitting agency with the State fish and game agencies as well as the U.S. Fish and Wildlife Service (Service). Normally the Corps will not issue a permit over a State objection. The Service's Division of Ecological Services reviews permit applications in accordance with national guidelines designed for protection of fish and wildlife resources, wetlands, and other essential habitats potentially affected by proposed projects. Service policy is to recommend denial of any project that would destroy or damage productive wetlands (including tidelands). However, the recommendations of the Service do not have to be followed and are not always implemented by the permitting agency. Persistent applicants will usually receive permits, if opposition is based only on environmental concerns.

The Wetlands Protection Executive Order does not apply to private project applicants. Under the Federal consistency provisions of the CZMA, if a project receives local and State approval, Federal permitting agencies normally will issue over other objections to be consistent with State CZM programs "to the maximum practicable extent." Corps of Engineers' regulations require that great weight be given to the State position.

8) The 1980 Washington State Legislature. On March 13, 1980, the 1980 Washington State Legislature passed Engrossed Senate Bill No. 3371 - as amended by the House. The relevant passage reads as follows:

AN ACT relating to tidelands: authorizing the purchase of tidelands for establishment of an estuarine sanctuary; and making an appropriation.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

NEW SECTION. Section 1. For the purpose of establishing an estuarine sanctuary in Padilla Bay, Skagit County, there is appropriated from the general fund to the department of ecology for the biennium ending June 30, 1981, the sum of seventy thousand dollars, or as much thereof as may be necessary. The department of ecology may use such funds for the acquisition of tidelands within Padilla Bay, Skagit County, either through direct expenditures or through grants to a federal, state, or local agency and for administering the establishment of an estuarine sanctuary in Padilla Bay, Skagit County.

No moneys appropriated under this section may be used by the department of ecology for acquisition of tidelands unless made in combination with an equal match of moneys from other public or private sources.

Prior to acquiring any tidelands, the department of ecology shall determine that the use of the property to be acquired will be consistent with chapter 90.58 RCW, the shoreline management act, and guideline and master programs adopted thereunder.

Hunting, fishing, boating and noncommercial taking of shellfish shall be authorized but shall be regulated on properties acquired under this section or as a result of the passage of this section.

PART IV: AFFECTED ENVIRONMENT

A. Location

Padilla Bay is located in northern Puget Sound. Padilla Bay lies approximately 3 miles (4.8 km) east of Anacortes and 10 miles (16 km) northwest of Mount Vernon, the county seat of Skagit County, Washington. Prominent local features are identified as follows: 1) Padilla Bay, 2) Swinomish Channel, 3) March Point, 4) Anacortes, 5) Guemes Island, 6) Hat Island, 7) Samish Island, 8) Bay View State Park, 9) Saddlebag State Park, and 10) Bayview Community.

B. Sanctuary Description

The areas surrounding the sanctuary include:

- SOUTH: The southern boundary is the Burlington Northern Railroad right-of-way, which is located parallel to State Highway 20. The location of these facilities divide agricultural lands making up the southern part of the proposed project and agricultural lands that are not in the project and are located south of the State highway;
- EAST: The eastern boundary, approximately 8 miles long (12.8 km), includes agricultural land (70%), the Bayview residential area (20%), Bay View State Park (02%), and the unincorporated city of Bayview (08%);
- NORTH: The northern boundary is parallel with, but located 500 feet south of, Samish Island, a high bank residential area; and
- WEST: The western boundary is open water that includes the Swinomish Channel and open water to the San Juan Islands. The southern part of the western boundary is located consistent with the "claimed" Swinomish Indian Tribal Community eastern reservation boundary. The northern part of the boundary is the "seaward boundary" established in 1931 by the State Commissioner of Lands and the western boundary of Saddlebag State Park.

The agricultural lands are rich farmlands that show little indication that any change is being proposed from that use. The agricultural lands include reclaimed marshlands and provide a substantial amount of economic impact in the area of the proposed project.

Padilla Bay is a shallow bay, the bottom of which is relatively flat with a variation in elevation of approximately 1 foot per mile (1.6 km). Extreme low water for Padilla Bay, as interpreted from Coast and Geodetic publications, is elevation 90.8 and the line of mean high water is 103.0.

There is a great deal of variety in Padilla Bay shorelines. This variety is an important element in the overall visual quality of the bay shorelines in terms of both high and low visual amenities.

The shorelines of Padilla Bay all show the influences of human use. The cedar post seawall along the mainland north and south of Joe O'Leary Slough (east boundary) and the refineries at March Point are proof of longstanding and ongoing human activity around the bay and, together with the eastbound span of State Highway 20 over the Swinomish Channel, they represent the most intrusive cultural elements on the bay.

Samish Island and Bayview Ridge are glacial till uplands, rising directly up from the tidelands. At some points, the bluffs on Samish Island (north boundary) rise to 100 feet or more, while Bayview Ridge rises between 20 and 40 feet up from the beach to Bayview-Edison Road (east boundary). About one mile north of Bay View State Park, the bluffs give way to a permanent beach berm and a large, marshy backshore as Bayview Ridge angles away from the shoreline and ends in the Samish River floodplain. From this point to Samish Island, the mainland is flat, nearly at sea level, and is protected from tidal inundation by a dike and cedar post seawall. Landward views extend to Chuckanut Mountain and other coastal foothills and beyond to the Cascade Mountain Range.

The south shore, from Indian Slough to the west side of Swinomish Channel, is heavily modified by human activity. The sloughs and shoreline are diked, there are a number of artificially formed sand islands, and both Highway 20 and the Anacortes rail spur (Burlington Northern Railroad) lie close to the high tide line.

The proposed project area is approximately 11,612 acres, of which approximately 10,289 acres are second class tidelands, with the remainder identified as 1,323 acres of uplands.

The State reserved all oil, gasses, ores, minerals, fossils, etc. when the tidelands were conveyed by the State to private ownership except for the tidelands between mean high tide and mean low tide, fronting on several of the parcels, and Parcel No. 85 through 100 inclusive in the Padilla Bay tracts.

All described real estate is second class tidelands. Any portion that lies or may in the future lie beneath navigable waters is subject to rights of navigation together with rights of fishing, boating, water skiing, and other recreational purposes generally regarded as corollary to the right of navigation and the use of public waters. (Wilbur v. Gallegar, 77 Wn.2d 307).

C. Real Property Ownership

The real property ownership in Padilla Bay is almost all private ownership with several small areas owned by the State and local agencies.

Of the proposed sanctuary's 11,612 acres, only 243 acres or .019% of the sanctuary is in public ownership. The State Park Commission owns 46 acres, which are Bay View State Park and Saddlebag and Dot Island State Park. The State Game Department owns 98 acres, 34 acres of which comprise a waterfowl habitat and hunting area, and a 64-acre upland area that is contiguous with the tidelands and is the proposed location for the estuarine sanctuary interpretative and research center. Approximately 99 acres in small parcels were acquired by the county because of nonpayment of property taxes. These areas, which are currently in county ownership, will be donated to the project once the State's application is approved by NOAA.

D. Soils Geology

Padilla Bay is part of an extensive plain formed by the delta and flood deposits of the Skagit River following retreat of the Vashon Glacier about 14,000 years ago. Erosion has removed much of the sand and gravel deposited by the glacier. Formerly, the Skagit River, which heads in the Canadian Cascades, emptied into Padilla Bay, except for a much reduced winter-spring flow that enters Padilla Bay through Swinomish Channel.

Prior to the advent of white settlers in the 1850's, Padilla Bay and Samish Bay were linked across a shallow salt marsh stretching between Bay View Ridge and Samish Island. Much of this marsh, and the extensive marshes of the former Swinomish Slough south of Padilla Bay, were diked against tidal inundation and spring flooding of the Skagit River to create farmlands. Present soils are the result of alluvial deposits and wave action and are a mixture of clay, silt, and sand (U.S. Army Corps of Engineers, 1976).

E. Climate

The area around Anacortes has a mild maritime climate strongly influenced by the waters of Puget Sound and the Straits of Juan de Fuca and Georgia. Winters are typically wet and cool while summers are warm

and dry. In part, this is due to a "rain shadow" created by the Olympic Mountains to the southwest. January is the coolest month, averaging 44.5° Fahrenheit (6.9°C), and July is the hottest, averaging 72.4° (22.4°C). Approximately two-thirds of the annual precipitation, which averages 25.7 inches (65.3 cm), occurs in the period from November through April.

F. Biological Characteristics

1. Vegetation

Ten habitat types with characteristic vegetation and plant communities may be identified for Padilla Bay and surrounding areas within the Area of Concern for these unique wildlife ecosystems. These are: (1) open marine waters, (2) subtidal sand and mud, (3) eelgrass beds, (4) exposed mudflats, (5) salt marshes, (6) beaches, (7) rocky shorelines, (8) dredge spoil sites, (9) nonforested uplands (including disturbed or altered areas, dikes, and agricultural lands), and (10) forested uplands.

Some of the more prominent plant associations and species are described below. Appendix VIII contains a partial list of plants (with scientific names) for the Padilla Bay area; the list may be assumed to characterize Samish Bay plants as well. This list was compiled from coastal surveys by the Washington Department of Game and previous listings and field work by Sylvester and Clogston (1958) and Smith and Benedict (1977).

Plant species (or groups) occurring in the marine waters, intertidal mudflats, rocky shores, and subtidal bottoms include phytoplankton, diatoms, marine algae (such as rockweed, sea lettuce, kelp, and laver), and eelgrass. Two species of eelgrass occur in extensive beds in the subtidal and lower intertidal zones of the bays. Colonial diatoms are abundant over much of the mud surfaces. The eelgrass, algae, and diatoms are highly important to the primary productivity of these estuaries. Along with the phytoplankton of the adjoining marine waters, they support the various animals of these habitats.

Sand or cobble beaches here support very few plants. A fringe of salt marsh, much reduced from former times, is located outside the diked areas. Dominant plant species include the seashore saltgrass, pickleweed, orache (fat hen), Canada sandspurry, gumweed, seaside arrowgrass, foxtail barley, and wigeon grass (in brackish pools). Smooth cordgrass, introduced by duck hunters, occurs in small stands. The high organic matter production of these emergent plants, which are tidally exported as detritus to a large extent, is highly important to fueling of estuarine and marine ecosystems (Gosselink, Odum, and Pope, 1974).

In freshwater sloughs and along streams, Lyngby's sedge is found in pure stands. Tufted hairgrass is found along these waterways in higher elevational bands. Dredge spoil sites and islands are vegetated mainly with dune wildrye, red fescue, and cheatgrass in sparse stands. Dikes bordering the salt marshes and mudflats support open grass and forb communities and clumps of blackberries and wild rose, plus occasional trees such as red alder, black cottonwood, and willow. Red clover, English plaintain, Canada thistle, quack grass, redtop, velvet grass, and pearly everlasting will be found on dikes bordering the agricultural lands where crops of peas, grains, seed crops, and pasture grasses are grown.

Ridges, benches, and slopes along some parts of the bay (Samish Island, Bay View Ridge, March Point peninsula, and Hat Island) support second growth forests or strips of mixed conifers and broadleaf trees, including Douglas fir, western red cedar, red alder, Pacific madrone, and bigleaf maple. In addition, there are numerous shrubs and understory species such as salal, Oregon grape, and stinging nettle in the forest habitat.

2. Marine Invertebrates

Numerous species of marine worms, clams, snails, crabs, shrimp, and other invertebrates important in the food chains of fishes, birds, and mammals have been identified. Appendix VIII contains a partial list of invertebrates identified at Padilla Bay. The list was compiled from surveys by the Department of Game (Sweeney, 1978); and by Sylvester and Clogston, 1958; Goodwin, 1974; Smith and Benedict, 1977; and Webber (unpublished data). Pacific oyster, which was introduced for commercial growing in the 1930's, is now found only in remnant numbers due to past pollution, oyster drills, and unsuitable fattening areas.

3. Fish

At least 57 species of fish have been identified for Padilla Bay. Among the more notable groups and species of sport and commercial importance are five species of salmon, steelhead and sea run cutthroat trout, smelt, Pacific herring, sole, flounder, and ten species of sculpins, which are eaten by a variety of large predators. Appendix VIII contains a partial listing of fish species compiled by the Department of Game (Sweeney, 1978); and from work by Sylvester and Clogston, 1958; Delacey and Miller, 1972; and Miller et al. (unpublished).

4. Birds

At least 239 birds have been identified for Padilla Bay, Samish Bay and Flats, and nearby Fidalgo Bay. Appendix VIII contains an annotated list of these species compiled from several sources.

Padilla Bay is particularly notable for large flocks of dabbling ducks (e.g., American wigeon, mallard, pintail, greenwinged teal, and northern shoveller) and sandpipers (particularly dunlins and western sandpipers). These are the primary prey species of the endangered American peregrine falcon and Peale's peregrine falcon (a look-alike subspecies that is not listed as endangered) and other hawks that winter on the Samish Flats (Anderson, et al., 1977), and to a lesser extent at the south end of Padilla Bay.

Because of its strategic location and vast area of eelgrass beds, Padilla Bay is an important staging area for the black brant. This is unquestionably the most important habitat in Puget Sound (perhaps in the northwest) for this sensitive species that is so utterly dependent on shallow, coastal bays. An average of 5,000 brant winter on the bay. However, peak spring counts have averaged 47,392 birds (Pacific Coast Brant Management Plan, 1978), and it has been estimated that up to 50% of the entire flyway population (which includes most of the Pacific brant species) passes through here. An average of 50,000 ducks winter on Padilla and Samish Bays. Of this number, over 6,000 are diving ducks, including canvasbacks, scaup, goldeneyes, buffleheads, and scoters on Padilla Bay alone (Jeffrey, 1976). Four bald eagle nests are located along the shores of these bays. Over 20 eagles have been counted in a single day wintering in this area along with merlins, kestrels, snowy owls, marsh hawks, Cooper's hawks, sharpshinned hawks, rough-legged hawks, and red-tailed hawks. A blue heron rookery of approximately 150 breeding pairs (among the four or five largest in Washington) is located on Samish Island. Numerous species of loons, grebes, gulls, terns, and many seabirds are also found on Padilla Bay, along with a variety of upland birds including the ruffed grouse, ringnecked pheasant, and bandtailed pigeon. Nesting by ducks and shorebirds occurs on natural and artificial islands in the two bays.

5. Mammals

A total of 14 species of mammals have been identified for the Areas of Concern by the Department of Game (Sweeney, 1978). Most notable are the black-tailed deer, harbor seal, river otter, raccoon, red fox, coyote, muskrat, and beaver. As many as 70 harbor seals have been observed in Padilla Bay (Department of Ecology, 1979). Appendix VIII contains the partial list of mammals for Padilla Bay.

PART V: LIST OF PREPARERS

Mr. James W. MacFarland - U.S. Department of Commerce

Mr. MacFarland received his B.A. and M.A. in Economics and has previously prepared land acquisition strategies, purchased land, acted as a consultant, and analyzed the socioeconomic impacts of land preservation for major land conservation organizations. He is the author of several articles and studies on natural resource protection and is a former college lecturer in economics.

Currently, he is the Estuarine Sanctuary Program Manager for the Office of Coastal Zone Management within the National Oceanic and Atmospheric Administration. His present position includes direct project responsibility for seven existing estuarine sanctuaries, and the establishment of future estuarine sanctuaries.

Primary responsibility in the preparation of this DEIS included organization and preparation of the report for publication. In addition, he prepared all sections not specifically discussed below.

Mr. Milton H. Martin - Washington State Department of Ecology

Mr. Martin is currently an environmental planner for the Washington State Department of Ecology. His background is in the field of Administration and Management in public recreation and park management, where he has held the following positions since 1959: Director, Parks and Recreation Department, Vancouver, Washington; Superintendent, Parks and Recreation Department, Benton County, Washington; Assistant Director, Washington State Parks and Recreation Commission; and Assistant Administrator, Washington State Outdoor Recreation Agency.

He is a lecturer on public parks and recreation administration and has prepared and conducted workshops, conferences, and various public programs relating to recreation financing, programs, management techniques, recreation legislation, etc.

His current and primary responsibility is the proposed Padilla Bay National Estuarine Sanctuary in Washington State, which includes the organization and implementation of the program (including the DEIS) to establish the sanctuary.

Mr. Richard S. Weinstein - U.S. Department of Commerce

Mr. Weinstein currently is a writer-editor for OCZM/NOAA. He has a B.S. in zoology, but at the present time he is writing a novel that may serve as his Master's Thesis, completing the requirements for his degree. He is a published fiction author, has done some freelance factual articles, and has written and edited several major studies prepared by OCZM. In the past, he has taught English at the college level and has spoken at international conventions of genre authors, editors, and readers.

Mr. Weinstein edited this DEIS.

U.S. Fish and Wildlife Service

The United States Fish and Wildlife Service, which also considered protection of the Padilla Bay area as part of its Unique Wildlife Ecosystem Program, provided support, information, and data for the preparation of this report and the total Estuarine Sanctuary Project.

Steering Committee

Joseph R. Blum, Area Manager, U.S. Fish and Wildlife Service; Helen Engle, President, Washington Environmental Council; Dr. Charles Flora, Past President, Western Washington State College; Dr. James Ford, President, Skagit Valley College, Robert D. Keller, Manager, Port of Anacortes; Charles Kiel, Anacortes Councilman; Ralph Larson, Director, Washington State Department of Game; Bill Malseed, Manager, Shell Oil Company - Anacortes Refinery; Bud Norris, Chairman, Skagit County Commissioners; John Stone, President, Washington State Sportsman Council; Phil Templeton, Manager, Texaco, Inc. - Puget Sound Plant; Marvin Wilbur, Executive Director, Swinomish Indian Tribal Community.

Steering Committee - Subcommittee

Management Committee - Bill Malseed, Bud Norris, Helen Engle and Joseph Blum.

Technical Committee - is represented on the subcommittees listed below except for: Earl G. Schumacher, Shell Oil Company and Claude Lakewold, Natural Resource Projects, Washington State Office of Financial Management.

Technical Committee - Subcommittees

Site Selection - Co-Chairman, Bud Norris, Chairman - Board of Skagit County Commissioners; Co-Chairman, William A. Johnson, Supervisor, Marine Land Management, Washington State Department of Natural Resources; Jack Webb, Texaco Oil Company; Glenn Dickenson, Citizen; Gary Klein, U.S. Fish and Wildlife Service; Bob Schofield, Director, Skagit County Planning Department; Margaret Yeoman, Citizen; Bob Olander, City Manager, City of Anacortes; and David Ortman, Federation of Western Outdoor Clubs.

Research Program - Co-Chairman, Dr. C. J. Flora, Director, Western University - Sundquist Marine Studies Laboratory; Co-Chairman, Dr. Carl Nyblade, University of Washington - Friday Harbor Laboratory; Richard Granstrand, Fish Biologist, Swinomish Tribal Community; John Andrews, Game Biologist, Washington State Department of Game; Terence Wahl, Citizen; and Russ Orell, Washington State Department of Fisheries.

Education Program - Co-Chairman, Dr. James M. Ford, President, Skagit Valley College; Co-Chairman, David A. Kennedy, Supervisor, Science and Environmental Education Programs - Washington State Superintendent of Public Instruction; Fayetee Krause, The Nature Conservancy; James Monroe, Skagit Valley College; and Sally Van Neil, Washington Environmental Council - Instructor Everett Community College.

Recreation Program - Co-Chairman, John Stone, President, Washington State Sportsman Council; Co-Chairman, Bill Bush, Chief, Long Range Planning, Washington State Parks and Recreation Commission; Tom Mike Henry, Washington State Sportsman Council; and Ron Knutzen, Citizen.

PART VI: LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS RECEIVING COPIES

FEDERAL AGENCIES

Advisory Council on Historic Preservation
Department of Agriculture
Department of Commerce
Department of Defense
Department of Energy
Department of Health, Education & Welfare
Department of Housing & Urban Development
Department of the Interior
Department of Justice
Department of Labor
Department of Transportation
 U.S. Coast Guard
Environmental Protection Agency
Federal Energy Regulatory Commission
General Services Administration
Marine Mammal Commission
National Park Service, Sedro-Woolley, WA
Nuclear Regulatory Commission
Office of Archeology & Historic Preservation, Olympia, WA - Sheila S. Stump
U.S. Corps of Engineers, Seattle, WA - Dwain F. Hogan
U.S. Fish and Wildlife Service, Olympia, WA - Joseph R. Blum, Area Manager
U.S. Geological Survey, Mount Vernon, WA

CONGRESS

Honorable Warren G. Magnuson, U.S. Senator - Seattle, WA
Honorable Henry M. Jackson, U.S. Senator - Everett, WA
Honorable Joel Pritchard, U.S. Representative - Seattle, WA
Honorable Al Swift, U.S. Representative - Everett, WA
Honorable Don Bonker, U.S. Representative - Olympia, WA
Honorable Mike McCormack, U.S. Representative - Richland, WA
Honorable Thomas S. Foley, U.S. Representative - Spokane, WA
Honorable Norm Dicks, U.S. Representative - Tacoma, WA
Honorable Mike Lowry, U.S. Representative - Seattle, WA

STATE AGENCIES

Superintendent of Public Instruction, Olympia, WA - Dr. Frank B. Brouillet
Commissioner of Public Lands, Olympia, WA - Bert Cole, Commissioner
Dept. of General Administration, Real Property Division, Olympia, WA -
 Will Lewis, Supervisor
Interagency Comm. for Outdoor Recreation, Tumwater, WA - Bob Wilder,
 Administrator

Dept. of Fisheries, Olympia, WA - Frank Haw, Deputy Director
 Parks and Recreation Commission, Olympia, WA - Jan Tveten, Director
 Office of Financial Management, Olympia, WA - Bob Bensen, Director
 Department of Game, Olympia, WA - Ralph Larson, Director

LOCAL AGENCIES

City of Bow, Dike District No. 5 - Claude Hoffman
 City of Mt. Vernon, Dike District No. 8 - Vernon Egbers
 City of Edison, Dike District No. 19 - Ronald A. Johnson
 Skagit County - Skagit County Cooperative Extension - Jack T. Crawford
 City of Anacortes - Bob Olander, City Manager
 City of Mt. Vernon - Ruth Gidlund, Mayor
 City of Mt. Vernon - Board of Skagit County Commissioners -
 Bud Norris, Chairman
 Skagit County, Robert D. Keller, Manager, Port of Anacortes
 Skagit County, Swinomish Indian Tribal Community - Marvin Wilbur, Exec. Dir.
 Sedro-Woolley City, Skagit County Planning Department - Bob Schofield, Dir.

NATIONAL INTEREST GROUPS

A.M.E.R.I.C.A.N.
 AFL-CIO
 American Association of Port Authorities
 American Bureau of Shipping
 American Farm Bureau Federation
 American Fisheries Society
 American Gas Association
 American Industrial Development Council
 American Institute of Architects
 American Petroleum Institute
 American Shore and Beach Preservation Association
 American Society of Civil Engineers
 American Society of Landscape Architects, Inc.
 American Society of Planning Officials
 American Waterways Operators
 Amoco Production Company
 Atlantic Richfield Company
 Atomic Industrial Forum
 Boating Industry Association
 Bultema Dock & Dredge Company
 Center for Law and Social Policy
 Center for Natural Areas
 Center for Urban Affairs
 Center for Urban & Regional Resources
 Chamber of Commerce of the United States
 Chevron U.S.A., Inc.
 Cities Service Company

Coast Alliance
Conservation Foundation
Continental Oil Company
Council of State Planning Agencies
The Cousteau Society
CZM Newsletter
Ducks Unlimited, Seattle, WA - Jerry Loundsbury, N.W. Representative
Edison Electric Institute
El Paso Natural Gas Co.
Environmental Policy Center
Environmental Defense Fund, Inc.
Environmental Law Institute
EXXON Company, U.S.A.
Friends of the Earth
Friends of the Earth, Seattle, WA - Audrey Newman/David Ortman
Great Lakes Basin Commission
Gulf Energy and Minerals, U.S.
Gulf Oil Company
Gulf Refining Company
Industrial Union of Marine & Shipbuilding
Workers of America
Institute for the Human Environment
Interstate Natural Gas Association of America
Lake Michigan Federation
Marathon Oil Company
Marine Technology Society
Mobil Oil Corporation
Mobil Exploration & Producing, Inc.
Murphy Oil Company
National Association of Conservation Districts
National Association of Counties
National Association of Home Builders
National Association of Realtors
National Audubon Society
National Coalition for Marine Conservation, Inc.
National Farmers Union
National Federation of Fisherman
National Fisheries Institute
National Forest Products Association
National Marine Manufacturers Association
National Ocean Industries Association
National Parks and Conservation Association
National Recreation and Park Association
National Research Council
Natural Resources Law Institute
National Society of Professional Engineers
National Waterways Conference
National Wildlife Federation

Natural Resources Defense Council
 The Nature Conservancy
 The Nature Conservancy, Seattle, WA - Elliott Marks, Director
 Norfolk Dredging Company
 Outboard Marine Corporation
 Resources for the Future
 Rose, Schmidt & Dixon
 Shell Oil Company
 Sierra Club
 Sierra Club, Seattle, WA - Douglas Scott
 Skelly Oil Company
 Soil Conservation Society of America
 Sport Fishing Institute
 Standard Oil Company of Ohio
 State University Law School
 State University of New York
 Sun Company, Inc.
 Tenneco Oil Company
 Texaco, Inc.
 Trust for Public Lands, Burton, WA - Joel Kuperberg, Director
 Union Oil Company of California
 University of Pittsburgh
 Urban Research and Development Association, Inc.
 Western Oil and Gas Association
 Wildlife Management Institute
 The Wildlife Society
 Woods Hole Oceanographic Institute

STATE INTEREST GROUPS

Pacific Science Center Foundation, Seattle, WA - Bonnie Deturck
 Horton Dennis Co., Seattle, WA - Ken Yoshita, Owner
 Seattle Times, Seattle, WA - Eric Prine
 Audubon Society, North Cascades Chapter, Bellingham, WA - Greg Hart
 Audubon Society, Black Hills Chapter, Olympia, WA - Jack Davis
 Center for Environmental Understanding, Spokane, WA - Frank Nicole
 Citizens for Clean Water, Inc., Olympia, WA - John Girad
 Clean Water Coalition, Seattle, WA - Ken Ensroth
 Environmental Science League, Tacoma, WA - Jeffrey Bland
 Hood Canal Environmental Council, Seabeck, WA - Philip Best
 Olympic Conservation Council, Port Angeles, WA - Harry Lydiard
 League of Women Voters, Seattle, WA - Astrid Hedman
 League of Women Voters, Bellingham, WA - Lynn Bettis
 League of Women Voters, Lynnwood, WA - Mary Jane Thompson
 League of Women Voters, Olympia, WA - Betty Tabbutt
 North Cascades Conservation Council, Seattle, WA - Margaret Miller
 N.W. Seashore Alliance, Everett, WA - Tanis Marsh

Skagit Environmental Council, Mt. Vernon, WA - Dr. Fred Darvill
 Admiralty Audubon Society, Pt. Townsend, WA - Edward P. Kaiser
 N.W. Search, Seattle, WA - Harriet Bullitt, Editor
 Palouse Audubon Society, Pullman, WA - Irven O. Buss
 Association of Washington Cities, Tumwater, WA - Stan Finkelstein
 Washington State Association of Counties, Olympia, WA - Gary Lowe
 Skagit Valley Herald, Mt. Vernon, WA - Noel Johnson
 Washington Appraisal Service, Bellevue, WA - John F. Leitz, Jr.
 Washington Environmental Council, Tacoma, WA - Helen Engle, President
 Washington State Sportsman Council, Clear Lake, WA - John Stone, President

LOCAL INTEREST GROUPS

Four-H Leaders Council, Mt. Vernon, WA - Mrs. Richard Bergeson
 Future Farmers of America, Mt. Vernon, WA - Howard Howell
 Chuckanut Dist. Garden Clubs, Mt. Vernon, WA - Clara Sande
 Puget Sound Gillnetters Assn., Ballard, WA - Phil Sutterland
 Girl Scouts/Brownies of America, Burlington, WA - Dianna Robin
 Skagit County Historical Society, Burlington, WA - Mary Ploeg
 Independent Insurance Agents Assn., Mt. Vernon, WA - Bill Evans
 Independent Order of Foresters, Sedro-Woolley, WA - Gordon Gasho
 Mt. Vernon Jaycees, Mt. Vernon, WA - John Whitney
 Jaycee Wives, Mt. Vernon, WA - Teresa Hamilton
 Golden Kiwanis Club, Mt. Vernon, WA - Howard Asher
 Mt. Vernon Kiwanis Club - Jack Woodmansee
 Leisure Time Club, Mt. Vernon, WA - George Nelson
 Memorial Garden Club, Mt. Vernon, WA - Anabel Brierly
 Men's Garden Club, Anacortes, WA - Joe Dupre
 Mt. Baker Bicycle Club, Bellingham, WA - Dean Kahn
 Mt. Vernon Chamber of Commerce - Phyllis Coole, Director
 N. Cascade Highway Assn., Sedro-Woolley, WA - Jim Mullen
 N.W. Steelheaders of Trout Unlimited, Mt. Vernon WA - Les Olsen
 Pioneer Assn. Skagit County, Mt. Vernon, WA - Lou Valentine
 Rainbow Girls, Mt. Vernon, WA - Mrs. Randy Pratt
 Jones and Jones, Seattle, WA - David L. Towne
 Seattle Audubon Society, Seattle, WA
 Shoreline Committee, Tacoma, WA - Liz Greenhagen
 Washington Parks Foundation, Seattle, WA - Joann Fisher, Exec. Sec.
 Federation of Outdoor Clubs, Seattle, WA - Karen Fant, President
 Camp Fire, Bellingham, WA - Nancy Davis, Director
 Bellingham Herald, Bellingham, WA - George Boynton
 Anacortes Chamber of Commerce, Anacortes, WA - Maria Petrish, Director
 Save Whidbey Island for Tomorrow (SWIFT), Coupeville, WA - A.L. Ryan
 Skagit Alpine Club, Sedro-Woolley, WA - Louis Harris
 American Assn. of Retired People, Mt. Vernon, WA - Alice Piper
 American Assn. of University Women, Mt. Vernon, WA - Geraldine Hofer
 Skagit County Bd. of Realtors, Burlington, WA - Art Schreifels

Mt. Baker Council Boy Scouts of America, Mt. Vernon, WA - H. Christenson
 Campfire Girls/Bluebirds, Mt. Vernon, WA - Violet Walton
 Skagit County Dairymen's Federation, Bow, WA - Lyle Wesen
 Skagit County Democratic Party, Mt. Vernon, WA - John M. Meyer
 Downtown Mt. Vernon Business Center Organ, Mt. Vernon, WA - Jim Erlaub
 Edison Sportsman Club, Inc., Bow, WA - Dennis Weather
 Explorer Search & Rescue Team, Mt. Vernon, WA - Mike Woodmansee
 Retired Teachers Assn., Mt. Vernon, WA - Ethel Haltum
 Rotary Club, Mt. Vernon, WA - Don Angotti
 Senior Service Center, Mt. Vernon, WA
 Silver Arrow Bowmen, Burlington, WA - Bob Hall
 Skagit Mountain Rescue Unit, Mt. Vernon, WA - Bill Jones
 Skagit Rivers Guides Assn., Sedro-Woolley, WA - Dennis London
 Skagit Rock & Gem Club, Mt. Vernon, WA - Carroll Dillion
 Skagit Sams Camping Club, Mt. Vernon, WA - Nita Marsula
 Skagit Valley Mall Merchants, Mt. Vernon, WA - ern Arendse
 North Cascades Van Club, Mt. Vernon, WA - Kenneth Mohme
 Wash. Native Plant Society, Bellingham, WA - Rita Winn Lemon
 Western Env. Trade Assn., Mt. Vernon, WA - Don Johnsen
 Western Wn. Farm Crop Assn., Mt. Vernon, WA - Roger Nelson
 Wildcat Steelhead Club, Sedro-Woolley, WA - Dick Pitman
 Writers League of Skagit Valley, Sedro-Wooley, WA O Marian Simpson Burtt
 Admiralty Audubon Society, Pt. Townsend, WA - Eleanor Stopps
 Anacortes Chamber of Commerce, Anacortes, WA - Maria Petrish

INDIVIDUALS

Hal Zimmerman, Camas, WA
 John S. Isakson, Dames & Moore, Seattle, WA
 Wm. Todd Cahill & Assoc., Seattle, WA
 Mike Shockman, Dept. of Game, Seattle, WA
 Charles H. Odegard, Olympia, WA
 A. H. Clise, Clise Agency, Inc., Seattle, WA
 Paul Conner, Sequim, WA
 H. A. "Barney" Goltz, Bellingham, WA
 Susan E. Gould, Edmonds, WA
 Eleanor Lee, Burien, WA
 King Lysen, Seattle, WA
 Lowell Peterson, Concrete, WA
 Don L. Talley, Kelso, WA
 Peter von Reichbauer, Olympia, WA
 Gordon L. Walgren, Bremerton, WA
 F. "Pat" Wanamaker, Coupeville, WA
 Scott Barr, Edwall, WA
 Albert Bauer, Vancouver, WA
 Joanne J. Brekke, Seattle, WA
 Ellen Craswell, Bremerton, WA
 Shirley A. Galloway, Vancouver, WA

Joan Houchen, Camano Island, WA
 Jerry M. Hughes, Spokane, WA
 Ray Isaacson, Richland, WA
 Andrew Nisbet, Sequim, WA
 Paul Pruitt, Seattle, WA
 Nita Rinehart, Seattle, WA
 Paul Sanders, Bellevue, WA
 Curtis P. Smith, Ephrata, WA
 Georgette Valle, Seattle, WA
 Jerry L. Vrooman, Mt. Vernon, WA
 Jim Whiteside, Yakima, WA
 Simeon R. "Slim" Wilson, Marysville, WA
 Jay Holman, Olympia, WA
 Charles Kiel, Anacortes, WA
 John Andrews, Stanwood, WA
 Bill Bush, Olympia, WA
 Glenn Dickinson, Bow, WA
 Tom Mike Henry, Mt. Vernon, WA
 Ron Knutzen, Bow, WA
 Fayette Krause, Seattle, WA
 Sally Van Niel, Mountlake Terrace, WA
 Terence R. Wahl, Bellingham, WA
 Margaret Yeoman, Anacortes, WA
 Jim Whitmaker, Recreational Equipment, Inc., Seattle, WA
 Mr. and Mrs. Matthew Mottola, March-Hill Wildlife Haven, Friday Harbor, WA
 Marilyn Valich, Lynden, WA
 Roy Marokus, M.D., University of Texas Health Science Center, Dallas, TX
 Clint Morrow, Bellevue, WA
 Jan van Niel, Pilchuck Audubon Society, Everett, WA
 Rich Sparks, Anacortes, WA

INDUSTRY

Snelson-Anvil, Inc., Anacortes, WA - James W. Macy
 Shell Oil Co. - Anacortes Refinery, Anacortes, WA - Bill Malseed
 Texaco, Inc. - Puget Sound Plant, Anacortes, WA - Phil Templeton

UNIVERSITIES AND PUBLIC SCHOOLS

University of Washington - Friday Harbor Lab, Friday Harbor, WA
 Dr. Dennis Willows
 Division of Marine Resources, University of Washington, Seattle, WA
 Dr. Alan Duckspree
 Division of Marine Resources, University of Washington, Seattle, WA
 Dr. S. Murphy
 Anacortes School District #103, Mt. Vernon, WA - Dr. D.C. Duane Lowell
 Mt. Vernon School District, Mt. Vernon, WA - Tom Pollino, Superintendent

Burlington School District, Burlington, WA - Nathaniel Moore
Huxley College of Environmental Studies, Western Wash. University,
Bellingham, WA - Dr. Gil Peterson
Seattle Pacific University, Seattle, WA - Ronald C. Phillips
Shannon Pt. Marine Studies Center, Western Wash. University,
Anacortes, WA - Dr. Charles J. Flora
Skagit Valley College, Mt. Vernon, WA - Dr. James M. Ford
Skagit Valley College, Mt. Vernon, WA - Jim Monroe
University of Washington - Friday Harbor Lab, Friday Harbor, WA
Dr. Carl Nyblade

PART VII: APPENDICES

- I. Estuarine Sanctuary Guidelines, 1974 and 1977
- II. Estuarine Sanctuary Research Program
- III. Estuarine Sanctuary Educational Program
- IV. Estuarine Sanctuary Recreational Program
- V. Partial Preliminary Acquisition Grant Application
- VI. Partial Listing of Public Meetings Regarding Padilla Bay
- VII. Padilla Bay Estuarine Sanctuary Steering and Technical Committee Members
- VIII. Partial List of Plants, Marine Invertebrates, Fishes, Birds, and Mammals of Padilla Bay
- IX. Regulations and Policies Related to Padilla Bay

APPENDIX I

Estuarine Sanctuary Guidelines, 1974 and 1977

Department of Commerce

FRIDAY, SEPTEMBER 9, 1977

PART IV



DEPARTMENT OF COMMERCE

National Oceanic and
Atmospheric Administration



ESTUARINE SANCTUARY

Guidelines

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric
Administration

[15 CFR Part 921]

ESTUARINE SANCTUARY GUIDELINES

Policies and Procedures for Selection
Acquisition and ManagementAGENCY: National Oceanic and Atmos-
pheric Administration, Department of
Commerce.

ACTION: Proposed rule.

SUMMARY: This proposed rule will allow the National Oceanic and Atmospheric Administration to make a preliminary acquisition grant to a State to undertake a fair market value appraisal, and to develop a uniform relocation act plan, a detailed management plan and a research framework for a proposed estuarine sanctuary, developed pursuant to Section 315 of the Coastal Zone Management Act of 1972, as amended.

DATE: Comments must be received on or before October 1, 1977.

**FOR FURTHER INFORMATION CON-
TACT:**

Robert R. Klifer, Physical Scientist,
Policy and Programs Development Of-
fice, Office of Coastal Zone Manage-
ment, 3300 Whitehaven Parkway, Page
One Building, Washington, D.C. 20235
(202-634-4241).

SUPPLEMENTARY INFORMATION:
On June 4, 1974, The National Ocea-
nic and Atmospheric Administration
(NOAA) published 15 CFR Part 921 en-
titled, "Estuarine Sanctuary Guidelines"
pursuant to then section 312 of the
Coastal Zone Management Act of 1972,
as amended, for the purpose of establish-
ing policy and procedures for the selec-
tion, acquisition, and management of
estuarine sanctuaries.

Under new subsection 315(1) of the
Act, the Secretary of Commerce is au-
thorized to make available to coastal
States grants of up to 50 per centum of
the cost of acquisition, development, and
operation of estuarine sanctuaries. In
general, subsection 315(1) provides that
grants may be awarded to States on a
matching basis to acquire, develop, and
operate natural areas as estuarine sanc-
tuaries in order that scientists and stu-
dents may be provided the opportunity
to examine over a period of time ecologi-
cal relationships within the area. The
purpose of these guidelines is to imple-
ment this program.

As a result of two years of program
implementation, the regulations are pro-
posed to be modified to specifically au-
thorize the granting of acquisition
money to States in two stages:

(I) An initial grant for such prelimi-
nary purposes, as surveying and assess-
ing the land to be acquired, and the de-
velopment of management procedures
and research programs; and

(II) A second grant for the actual ac-
quisition of the land. The Federal share
of the sum of the two grants shall not

exceed 50 percent of the acquisition costs
involved. Any State receiving an initial
grant shall be obligated to repay it if,
due to any fault of the State, the sanctu-
ary is not established.

As a result of this new grant procedure,
much more information relating to costs,
values, management procedures, and re-
search programs will be available at the
time of the publication of a draft en-
vironmental impact statement. Proposals
made public to date in the form of an
Environmental Impact Statement (EIS)
have been criticized for lack of specificity
in these areas. By making a small pre-
liminary acquisition grant to a State,
the estuarine sanctuary proposal can be
more fully developed and the public can
become more aware of the costs and the
exact nature of the long-term manage-
ment.

In response to State questions about
estuarine sanctuary research, the pro-
posed regulations provide that such re-
search can be funded if it can be shown
to be related to program administration.

NOAA has reviewed these proposed
regulations pursuant to the National En-
vironmental Policy Act of 1969 and has
determined that promulgation of these
regulations will have no significant im-
pact on the environment.

*Compliance with Executive Order
11821.* The economic and inflationary
impact of these proposed regulations has
been evaluated in accordance with OMB
Circular A-107 and it has been deter-
mined that no major inflationary im-
pact will result.

Dated: August 26, 1977.

T. P. GLEITER,
Assistant Administrator
for Administration.

It is proposed to amend 15 CFR Part
921 as follows:

(1) By revising the table of contents
and authority citation to read as follows:

Subpart A—General	
Sec.	
921.1	Policy and objectives.
921.2	Definitions.
921.3	Objectives and implementation of the program.
921.4	Biogeographic classification.
921.5	Multiple use.
921.6	Relationship to other provisions of the Act and to marine sanctuaries.
Subpart B—Application for Grants	
921.10	General.
921.11	Application for preliminary acqui- sition grants.
921.12	Application for land acquisition grants.
921.13	Application for operational grants.
921.14	Federally-owned lands.
Subpart C—Selection Criteria	
921.20	Criteria for selection.
921.21	Public participation.
Subpart D—Operation	
921.30	General.
921.31	Changes in the sanctuary boundary, management policy, or research program.
921.32	Program review.

AUTHORITY: Sec. 315(1), Coastal Zone Man-
agement Act of 1972, as amended (90 Stat.
1030, (16 U.S.C. 1461) Pub. L. 94-370).

(2) By revising Subpart B—Applica-
tion for Grants—as follows:

Subpart B—Application for Grants

§ 921.10 General.

Section 315 authorizes Federal grants to coastal States so that the States may establish sanctuaries according to regu-
lations promulgated by the Secretary. Coastal States may file applications for grants with the Associate Administrator for Coastal Zone Management (OCZM), Office of Coastal Zone Management, Page 1, 3300 Whitehaven Parkway NW, Wash-
ington, D.C. 20235. That agency which has been certified to the Office of Coastal Zone Management as the entity respon-
sible for administration of the State coastal zone management program may either submit an application directly, or must endorse and approve applications submitted by other agencies within the State.

§ 921.11 Application for preliminary acquisition grants.

(a) A grant may be awarded on a matching basis to cover costs necessary to preliminary actual acquisition of land. As match to the Federal grant, a State may use money, the cost of necessary services, the value of foregone revenue, and/or the value of land either already in its possession or acquired by the State specifically for use in the sanctuary. If the land to be used as match already is in the State's possession and is in a pro-
tected status, the State may use such land as match only to the extent of any revenue from the land foregone by the State in order to include it in the sanc-
tuary. Application for a preliminary ac-
quisition grant shall be made on form SF 424 application for Federal assistance (non-construction programs).

(b) A preliminary acquisition grant may be made for the defrayal of the cost of:

(1) An appraisal of the land, or of the value of any foregone use of the land, to be used in the sanctuary;

(2) The development of a Uniform Relocation Assistance and Real Property Acquisition Policies Act plan;

(3) The development of a sanctuary management plan;

(4) The development of a research and educational program; and/or,

(5) Such other activity of a prelimi-
nary nature as may be approved in writ-
ing by OCZM. Any grant made pursuant
to this subsection shall be refunded by
the State to whatever extent it has spent
in relation to land not acquired for the
sanctuary, and if OCZM requests such
refund.

(c) The application should contain:

(1) Evidence that the State has con-
ducted a scientific evaluation of its estu-
aries and selected one of those most rep-
resentative.

(2) Description of the proposed
sanctuary including location, proposed
boundaries, and size. A map(s) should
be included, as well as an aerial photo-
graph if available.

(3) Classification of the proposed sanctuary according to the biogeographic scheme set forth in § 921.4.

(4) Description of the major physical, geographic, biological characteristics and resources of the proposed sanctuary.

(5) Demonstration of the necessary authority to acquire or control and manage the sanctuary.

(6) Description of existing and potential uses of, and conflicts within, the area if it were not declared an estuarine sanctuary; and potential use restriction and conflicts if the sanctuary is established.

(7) List of protected sites, either within the estuarine sanctuaries program or within other Federal, State, or private programs, which are located in the same region or biogeographic classification.

(8) The manner in which the State solicited the views of interested parties.

(9) In addition to the standard A-95 review procedures, the grant application should be sent to the State Historic Preservation Office for comment to insure compliance with section 106 of the National Preservation Act of 1966.

(d) In order to develop a truly representative scheme of estuarine sanctuaries, the States should coordinate their activities. This will help to minimize the possibility of similar estuarine types being proposed in the same region. The extent to which neighboring States were consulted should be indicated.

§ 921.12 Application for land acquisition grants.

(a) Acquisition grants will be made to acquire land and facilities for estuarine sanctuaries that have been thoroughly described in a preliminary acquisition grant application, or where equivalent information is available. Application for an acquisition grant shall be made on SF 424 application for Federal assistance (construction program).

In general, lands acquired pursuant to this subsection are legitimate costs and their fair market value, developed according to Federal appraisal standards, may be included as match. The value of lands donated to the State and cash donations may also be used as match. If the State already owns land which is to be used in the sanctuary, the value of any use of the land foregone by the State in order to include such land in the sanctuary, capitalized over the next 20 years, may be used by the State as match. The value of lands purchased by a State within the boundaries of proposed sanctuaries while an application for a preliminary acquisition grant or land acquisition grant is being considered may also be used as match.

(b) An acquisition application should contain the following information:

(1) Description of any changes in proposed sanctuary from that presented in the preliminary acquisition grant application. If such an application has not been made, then, information equivalent to that required in such a grant application should be provided.

(2) Identification of ownership patterns, proportions of land already in the pool of Federally-owned lands would not

public domain; fair market value appraisal and Uniform Relocation Act plan.

(3) Description of research programs, potential and committed research organizations or agencies, and benefits to the overall coastal zone management program.

(4) Description of proposed management techniques, including the management agency and proposed budget—including both State and Federal shares.

(5) Description of planned or anticipated land and water use and controls for contiguous lands surrounding the proposed sanctuary (including, if appropriate, an analysis of the desirability of creating a marine sanctuary in adjacent areas).

(6) Assessment of the environmental, and socio-economic impacts of declaring the area an estuarine sanctuary, including the economic impact on the surrounding community and its tax base.

(7) Discussion, including cost and feasibility of alternative methods for acquisition and protection of the area.

§ 921.13 Application for operation grants.

(a) Although an acquisition grant application for creation of an estuarine sanctuary should include initial operation costs, subsequent applications may be submitted following acquisition and establishment of an estuarine sanctuary for additional operational funds. As indicated in § 921.11, these costs may include administrative costs necessary to monitor the sanctuary and to protect the integrity of the ecosystem. Extensive management programs, capital expenses, or research will not normally be funded by section 315 grants.

(b) After the creation of an estuarine sanctuary established under this program, applications (Form SF 424) for Federal assistance (non-construction program), for such operational grants should include at least the following information:

(1) Identification of the boundary (map).

(2) Specifications of the research and management programs, including management agency and techniques.

(3) Detailed budget.

(4) Discussion of recent and projected use of the sanctuary.

(5) Perceived threats to the integrity of the sanctuary.

§ 921.14 Federally-owned lands.

(a) Where Federally-owned lands are a part of or adjacent to the area proposed for designation as an estuarine sanctuary, or where the control of land and water uses on such lands is necessary to protect the natural system within the sanctuary, the State should contact the Federal agency maintaining control of the land to request cooperation in providing coordinated management policies. Such lands and State request, and the Federal agency response, should be identified and conveyed to the Office of Coastal Zone Management.

(b) Where such proposed use or con-

conflict with the Federal use of their lands, such cooperation and coordination is encouraged to the maximum extent feasible.

(c) Section 315 grants may not be awarded to Federally-owned lands; however, a similar status may be provided on a voluntary basis for Federally-owned lands under the provisions of the Federal Committee on Ecological Reserves program.

§ 921.20 [Amended]

(4) Subpart C—Selection Criteria—is amended by changing the first sentence in § 921.20 to read: "Applications for preliminary acquisition or land acquisition grants to establish estuarine sanctuaries will be reviewed and judged on criteria including:"

(5) Section 921.21 is revised, as follows:

§ 921.21 Public participation.

(a) Public participation in the selection of an estuarine sanctuary is required. In the selection process, the selecting entity (see § 921.10) shall seek the views of possibly affected landowners, local governments, and Federal agencies, and shall seek the views of possibly interested other parties and organizations. The latter would include, but need not be limited to, private citizens and business, social, and environmental organizations in the area of the site being considered for selection. This solicitation of views may be accomplished by whatever means the selecting entity deems appropriate, but shall include at least one public hearing in the area. Notice of such hearing shall include information as to the time, place, and subject matter, and shall be published in the principal area media. The hearing shall be held no sooner than 15 days following the publication of notice.

(b) The Office of Coastal Zone Management (OCZM) shall prepare draft and final environmental impact statements pertaining to the site finally selected for the estuarine sanctuary following public participation in the selection of that site, and shall distribute these as appropriate. OCZM may hold a public hearing in the area of such site at which both the draft environmental impact statement (DEIS) and the merits of the site selection may be addressed by those in attendance. OCZM shall hold such a hearing if: (1) In its view, the DEIS is controversial, or (2) if there appears to be a need for further informing the public with regard to either the DEIS or one or more aspects of the site selected, or (3) if such a hearing is requested in writing (to either the selecting entity or (CZM) by an affected or interested party, or (4) for other good cause. If held, such hearing shall be held no sooner than 30 days following the issuance of the DEIS and no sooner than 15 days after appropriate notice of such hearing has been given in the area by OCZM with the assistance of the selecting entity.

[FR Doc 77-90123 Filed 9-8-77; 8:45 am]

Estuarine
Sanctuary
Guidelines

TUESDAY, JUNE 4, 1974

WASHINGTON, D.C.

Volume 39 ■ Number 108

PART IV



DEPARTMENT OF COMMERCE

National Oceanic and
Atmospheric Administration



Estuarine Sanctuary Guidelines



Title 15—Commerce and Foreign Trade
CHAPTER IX—NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION, DE-
PARTMENT OF COMMERCE

PART 921—ESTUARINE SANCTUARY
GUIDELINES

The National Oceanic and Atmospheric Administration (NOAA) on March 7, 1974, proposed guidelines (15 CFR Part 921) pursuant to section 312 of the Coastal Zone Management Act of 1972 (Pub. L. 92-583, 86 Stat. 1280), hereinafter referred to as the "Act," for the purpose of establishing the policy and procedures for the nomination, selection and management of estuarine sanctuaries.

Written comments were to be submitted to the Office of Coastal Environment (now the Office of Coastal Zone Management), National Oceanic and Atmospheric Administration, before April 8, 1974, and consideration has been given those comments.

The Act recognizes that the coastal zone is rich in a variety of natural, commercial, recreational, industrial and esthetic resources of immediate and potential value to the present and future well-being of the nation. States are encouraged to develop and implement management programs to achieve wise use of the resources of the coastal zone, and the Act authorizes Federal grants to the States for these purposes (sections 305 and 306).

In addition, under section 312 of the Act, the Secretary of Commerce is authorized to make available to a coastal State grants of up to 50 per centum of the cost of acquisition, development and operation of estuarine sanctuaries. The guidelines contained in this part are for grants under section 312.

In general, section 312 provides that grants may be awarded to States on a matching basis to acquire, develop and operate natural areas as estuarine sanctuaries in order that scientists and students may be provided the opportunity to examine over a period of time ecological relationships within the area. The purpose of these guidelines is to establish the rules and regulations for implementation of this program.

The National Oceanic and Atmospheric Administration is publishing herewith the final regulations describing the procedures for applications to receive grants for estuarine sanctuaries under section 312 of the Act. The final regulations and criteria were revised from the proposed guidelines based on the comments received. A total of fifty (50) States, agencies, organizations and individuals submitted responses to the proposed section 312 guidelines published in the *FEDERAL REGISTER* on March 7, 1974. Of those responses received, eight (8) offered no comment or were wholly favorable as to the nature and content of the guidelines as originally proposed. Forty-two (42) commentators submitted suggestions concerning the proposed section 312 guidelines.

The following summary analyzes key comments received on various sections of

the proposed regulations and presents the rationale for the responses made.

Section 921.2 Definitions. Three comments requested that the term "estuary" be defined. Although the term is defined in the Act and also in the regulations dealing with Coastal Zone Management Program Development Grants (Part 920 of this chapter) published November 29, 1973, it has been added to these regulations and broadened slightly to include marine lagoons with restricted freshwater input such as might occur along the south Texas coast.

Two other comments requested that the "primary purpose" referred to in § 921.2(b) be clearly defined. Although elaborated upon in § 921.3(a), for the purpose of clarity this change has been made.

Section 921.3 Objectives and Implementation. Several comments suggested that the estuarine sanctuary program objectives were too narrowly defined and specifically that they should be broadened to include the acquisition and preservation of unique or endangered estuaries for wildlife or ecological reasons. Although the Act (section 302) declares it the nation's policy to preserve, protect, develop, and where possible, to restore or enhance coastal resources, this is perceived to be achievable through State actions pursuant to sections 305 and 306. While it is recognized that the creation of an estuarine sanctuary may in fact serve to preserve or protect an area or biological community, the legislative history of section 312 clearly indicates the estuarine sanctuary program was not intended to duplicate existing broad purpose Federal preservation programs, such as might be accommodated by use of the Land and Water Conservation Fund Act. Instead, both in the Act as well as its legislative history, the objective is defined as preserving representative estuarine areas for long-term research and educational uses.

Three other comments suggested the objectives of the program should be enlarged to include the restoration of environmentally degraded areas. This, too, is perceived to be a State requirement separate from section 312. In addition, adequate authority for restoring degraded water areas now exists (for example, Pub. L. 92-500 in addition to sections 302, 305 and 306 of the Act). No significant additional benefit would appear to result from declaring an area an estuarine sanctuary for the purposes of restoration.

A few comments indicated that the examples of sanctuary use were too heavily weighted toward scientific uses to the exclusion of educational uses. Public education concerning the value and benefits of, and the nature of conflict within the coastal zone, will be essential to the success of a coastal zone management program. The section has been changed to reflect an appropriate concern for educational use.

Some commentators suggested changes in or additions to the specific examples of sanctuary uses and purposes. These examples were taken from the Senate

and House Committee Reports and are considered sufficient to reflect the kinds of uses intended within an estuarine sanctuary.

Several comments were received pertaining to § 921.3(c) involving the restrictions against overemphasis of destructive or manipulative research. Ten comments indicated that the section was too weak and would not provide sufficient long-term protection for the sanctuary ecosystem. Several commentators specifically recommended deleting the words "would not normally be permitted" and inserting in their place "will not be permitted." In contrast, three respondents indicated that the potential use of estuarine sanctuaries for manipulative or destructive research was too restricted, and that these uses should be generally permitted if not encouraged.

The legislative history of section 312 clearly indicates that the intent of the estuarine sanctuary program should be to preserve representative estuarine areas so that they may provide long-term (virtually permanent) scientific and educational use. The uses perceived are compatible with what has been defined as "research natural areas." In an era of rapidly degrading estuarine environments, the estuarine sanctuary program will ensure that a representative series of natural areas will be available for scientific or educational uses dependent on that natural character, for example, for baseline studies, for use in understanding the functioning of natural ecological systems, for controls against which the impacts of development in other areas might be compared, and as interpretive centers for educational purposes. Any use, research or otherwise, which would destroy or detract from the natural system, would be inappropriate under this program.

In general, the necessity of or benefit from permitting manipulative or destructive research within an estuarine sanctuary is unclear. While there is a legitimate need for such kinds of research, ample opportunity for manipulative or destructive research to assess directly man's impact or stresses on the estuarine environment exists now without the need for creation or use of an estuarine sanctuary for this purpose. In contrast, a clear need exists for natural areas to serve as controls for manipulative research or research on altered systems.

The section on manipulative research has been changed to reflect the concern for continued maintenance of the area as a natural system. However, the modifier "normally" has been retained because, within these limits, it is not felt necessary to preclude all such uses; the occasion may rarely arise when because of a thoroughly demonstrated direct benefit, such research may be permitted.

Several comments suggested that the program should include degraded estuarine systems, rather than be limited to areas which are "relatively undisturbed by human activities." Such areas would permit research efforts designed to restore an estuarine area. As indicated

above, an ample legislative mandate to restore environmentally degraded areas already exists; the benefits to be derived from declaring such areas estuarine sanctuaries would be marginal. Indeed, it would appear that if restoration efforts cannot occur without estuarine sanctuary designation, then, given the limited resources of this program, such efforts would not be feasible.

A few commentators suggested that the phrase (§ 921.3(e)) "if sufficient permanence and control by the State can be assured, the acquisition of a sanctuary may involve less than the acquisition of a fee simple interest" be more clearly defined. Explanatory language has been added to that section.

Section 921.4 *Zoogeographic Classification*. Because the classification scheme utilized plants as well as animals, two commentators suggested that zoogeographic be changed to biogeographic. This change is reflected in the final regulations.

One comment suggested that selection of sanctuaries should depend on the pressures and threats being brought to bear upon the natural areas involved even if this meant selecting several sanctuaries from one classification and none from another.

The legislative history of section 312 clearly shows the intent to select estuarine sanctuaries on a rational basis which would reflect regional differentiation and a variety of ecosystems. The biogeographic classification system, which reflects geographic, hydrographic, and biologic differences, fulfills that intention. A scheme which would abandon that system, or another similar one, and would not fulfill the requirements of providing regional differentiation and a variety of ecosystems, would not be consistent with the intended purpose of the Act.

A few comments received suggested that the biogeographic classification scheme be enlarged by the addition of a new class reflecting an area or State of special concern or interest to the respondent. (No two commentators suggested the same area.) It is felt that adequate national representation is provided by the biogeographic scheme proposed, and that the changes offered were in most cases examples of sub-categories that might be utilized.

One comment suggested a specific change in the definition of the "Great Lakes" category. Portions of that suggestion have been incorporated into the final rules.

Two commentators requested assurance that sub-categories of the biogeographic scheme will in fact be utilized. The final language substitutes "will be developed and utilized" for "may be developed and utilized."

Section 921.5 *Multiple Use*. Several comments were received pertaining to the multiple use concept. Three commentators suggested that the multiple use directive was contrary to or absent from the Act and should be omitted. Ten respondents felt the concept should be more explicitly defined and restricted so

that the primary purpose of the sanctuary would be more clearly protected. In contrast, two commentators felt that the definition might prove too restrictive and should be broadened. Several commentators suggested that examples of anticipated multiple use might be appropriate.

While recognizing that it is not always possible to accommodate more than a single use in an environmentally sensitive area, it is not the intention to unnecessarily preclude the uses of sanctuary areas where they are clearly compatible with and do not detract from the long-term protection of the ecosystem for scientific and educational purposes. The language of § 921.5 has been changed accordingly.

Section 921.6 *Relationship to Other Provisions of the Act and to Marine Sanctuaries*. Several comments were received which commended and stressed the need for close coordination between the development of State coastal zone management programs, especially and land and water use controls, and the estuarine sanctuary program.

The relationship between the two programs is emphasized: estuarine sanctuaries should provide benefit—both short-term and long-term—to coastal zone management decision-makers; and State coastal zone management programs must provide necessary protection for estuarine sanctuaries. This necessary coordination is discussed not only in the estuarine sanctuary regulations, but will also be addressed in an appropriate fashion in guidelines and rules for Coastal Zone Management Program Approval Criteria and Administrative Grants.

Three commentators discussed the need for swift action by both State and Federal governments to establish and acquire estuarine sanctuaries. The Office of Coastal Zone Management intends to pursue the program as swiftly as available manpower restraints will permit.

A few comments sought reassurance that the estuarine sanctuaries program will in fact be coordinated with the Marine Sanctuaries Program (Title III, Pub. L. 92-532). The guidelines have been changed to reflect that both programs will be administered by the same office.

SUBPART B—APPLICATION FOR GRANTS

Section 921.10 *General*. One reviewer indicated uncertainty about which State agency may submit applications for grants under section 312. Although individual States may vary in the choice of individual agencies to apply for an estuarine sanctuary, because of the necessity for coordination with the State coastal zone management program the entity within the State which is the certified contact with the Office of Coastal Zone Management, NOAA, responsible for the administration of the coastal zone management program must endorse or approve an estuarine sanctuary application.

Appropriate language has been included to ensure this coordination.

Section 921.11 *Initial Application for Acquisition, Development and Operation*

Grants. Two comments requested that the source and nature of acceptable matching funds should be explicitly identified.

OMB Circular A-102 generally defines and identifies legitimate "match" for Federal grant projects. In general, reference should be made to that document. However, the section has been expanded in response to some specific and frequent questions.

Two comments stressed the need for increased availability of research funds to adequately utilize the potential of estuarine sanctuaries. While not an appropriate function of the estuarine sanctuary program, the Office of Coastal Zone Management is discussing the necessity of adequate funding with appropriate agencies.

One comment suggested that the term "legal description" of the sanctuary (§ 921.11(a)) is not appropriate for all categories of information requested. The word "legal" has been omitted.

Three reviewers indicated that the Act provides no basis for consideration of socio-economic impacts (§ 921.11(i)) and that this criterion seemed inappropriate to selecting estuarine sanctuaries. Apparently these reviewers misunderstood the intention of this requirement. The information in this section is necessary for preparation of an environmental impact statement which will be prepared pursuant to NEPA. Although required in the application, such information is not a part of the selection criteria, which are addressed in Subpart C, § 921.20.

One similar comment was received with regard to consideration of existing and potential uses and conflicts (§ 921.11(h)). This item is also discussed under selection criteria (§ 921.20(h)). It is intended that this criterion will only be considered when choosing between two or more sanctuary applications within the same biogeographic category which are of otherwise equal merit.

One comment drew attention to an apparent typographic error in § 921.11(m), where the term "marine estuaries" seems out of context. This has been corrected.

Two commentators suggested that public hearings should be required in the development of an estuarine sanctuary application. Although such a hearing is deemed desirable by the Office of Coastal Zone Management, it would not always seem to be necessary. The language in § 920.11(i) has been changed to reflect the sincere concern for the adequate involvement of the public, which is also addressed under a new § 920.21.

One respondent suggested that a new section be added requiring the applicant to discuss alternative methods of acquisition or control of the area, including the designation of a marine sanctuary, in place of establishing an estuarine sanctuary. A new section (§ 920.11(n)) has been added for this purpose.

Section 921.12 *Subsequent Application for Development and Operation Grants*. Three commentators expressed concern that the intent of § 921.12 be more clearly expressed. Appropriate changes have been made.

One comment was made that a provision should be included to use existing Federally owned land for the purpose of the estuarine sanctuary program. A section has been added for that purpose.

Section 921.20 *Criteria for Selection*. One comment suggested that the consideration of conflict with existing or potential competing uses should not be included as a selection criterion. As discussed above, this criterion is considered appropriate.

Another reviewer suggested the addition of a new criterion, consideration of "the need to protect a particular estuary from harmful development." As discussed earlier, this criterion is not considered appropriate. Such a basis for determining selection would lead to a reactionary, random series of estuarine sanctuaries, rather than the rationally chosen representative series mandated in the legislative history.

Two reviewers commented that the limitation on the Federal share (\$2,000,000 for each sanctuary) was too low and would severely restrict the usefulness of the program. However, this limitation is provided by the Act.

Another commentator suggested that § 921.20(g) was unnecessarily restrictive in that it might prevent selecting an estuarine sanctuary in an area adjacent to existing preserved lands where the conjunction might be mutually beneficial. The language of § 921.20(g) does not preclude such action, but has been changed to specifically permit this possibility.

Two commentators inquired whether the reference to a "draft" environmental impact statement (§ 921.20, last paragraph) indicated an intention to avoid further compliance with NEPA. It is the firm intention of the Office of Coastal Zone Management to fully comply in all respects with NEPA. The word "draft" has been struck.

Three reviewers addressed the problems of providing adequate public participation in the review and selection process. In addition to the change in § 920.11(1), a new section has been added to address this issue.

SUBPART D—OPERATION

Section 921.30 *General*. One commentator suggested that during contract negotiations, there should be a meeting between the applicant agency and proposed sanctuary management team, and representatives of the Office of Coastal Zone Management. The general provisions have been broadened to provide for this suggestion.

Two comments were submitted which urged that some discretion be exercised in the use and access to the sanctuary by scientists and students. Two other comments were received which requested specific protection for use by the general public. The guidelines have been changed to include these suggestions.

One comment was received suggesting language to clarify § 921.30(g). This was incorporated into the guidelines.

Two commentators expressed concern for enforcement capabilities and activities to ensure protection of the estuarine sanctuaries. A new section has been added which addresses this issue.

Finally, one suggestion was received that a vehicle for change in the management policy or research programs should be provided. A new section has been added for that purpose.

Accordingly, having considered the comments received and other relevant information, the Secretary concludes by adopting the final regulations describing the procedure for applications to receive estuarine sanctuary grants under section 312 of the Act, as modified and set forth below.

Effective date: June 3, 1974.

Dated: May 31, 1974.

ROBERT M. WHITE,
Administrator.

Subpart A—General

- Sec.
- 921.1 Policy and objectives.
- 921.2 Definitions.
- 921.3 Objectives and implementation of the program.
- 921.4 Biogeographic classification.
- 921.5 Multiple use.
- 921.6 Relationship to other provisions of the Act and to marine sanctuaries.

Subpart B—Application for Grants

- 921.10 General.
- 921.11 Application for initial acquisition, development and operation grants.
- 921.12 Application for subsequent development and operation grants.
- 921.13 Federally owned lands.

Subpart C—Selection Criteria

- 921.20 Criteria for selection.
- 921.21 Public participation.

Subpart D—Operation

- 921.30 General.
- 921.31 Changes in the sanctuary boundary, management policy or research program.
- 921.32 Program review.

AUTHORITY: Sec. 312 of the Coastal Zone Management Act of 1972 (Pub. L. 92-583, 86 Stat. 1280).

Subpart A—General

§ 921.1 Policy and Objectives.

The estuarine sanctuaries program will provide grants to States on a matching basis to acquire, develop and operate natural areas as estuarine sanctuaries in order that scientists and students may be provided the opportunity to examine over a period of time the ecological relationships within the area. The purpose of these guidelines is to establish the rules and regulations for implementation of the program.

§ 921.2 Definitions.

(a) In addition to the definitions found in the Act and in the regulations dealing with Coastal Zone Management Program Development Grants published November 29, 1973 (Part 920 of this chapter) the term "estuarine sanctuary" as defined in the Act, means a research area which may include any part or all of an estuary, adjoining transitional areas, and adjacent uplands, constituting

to the extent feasible a natural unit, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area.

(b) For the purposes of this section, "estuary" means that part of a river or stream or other body of water having unimpaired connection with the open sea where the seawater is measurably diluted with freshwater derived from land drainage. The term includes estuary-type areas of the Great Lakes as well as lagoons in more arid coastal regions.

(c) The term "multiple use" as used in this section shall mean the simultaneous utilization of an area or resource for a variety of compatible purposes or to provide more than one benefit. The term implies the long-term, continued uses of such resources in such a fashion that other uses will not interfere with, diminish or prevent the primary purpose, which is the long-term protection of the area for scientific and educational use.

§ 921.3 Objectives and implementation of the program.

(a) *General*. The purpose of the estuarine sanctuaries program is to create natural field laboratories in which to gather data and make studies of the natural and human processes occurring within the estuaries of the coastal zone. This shall be accomplished by the establishment of a series of estuarine sanctuaries which will be designated so that at least one representative of each type of estuarine ecosystem will endure into the future for scientific and educational purposes. The primary use of estuarine sanctuaries shall be for research and educational purposes, especially to provide some of the information essential to coastal zone management decision-making. Specific examples of such purposes and uses include but are not limited to:

(1) To gain a thorough understanding of the ecological relationships within the estuarine environment.

(2) To make baseline ecological measurements.

(3) To monitor significant or vital changes in the estuarine environment.

(4) To assess the effects of man's stresses on the ecosystem and to forecast and mitigate possible deterioration from human activities.

(5) To provide a vehicle for increasing public knowledge and awareness of the complex nature of estuarine systems, their values and benefits to man and nature, and the problems which confront them.

(b) The emphasis within the program will be on the designation as estuarine sanctuaries of areas which will serve as natural field laboratories for studies and investigations over an extended period. The area chosen as an estuarine sanctuary shall, to the extent feasible, include water and land masses constituting a natural ecological unit.

(c) In order that the estuarine sanctuary will be available for future studies, research involving the destruction of any portion of an estuarine sanctuary which would permanently alter the nature of the ecosystem shall not normally be

permitted. In the unusual circumstances where permitted, manipulative field research shall be carefully controlled. No experiment which involves manipulative research shall be initiated until the termination date is specified and evidence given that the environment will be returned to its condition which existed prior to the experiment.

(d) It is anticipated that most of the areas selected as sanctuaries will be relatively undisturbed by human activities at the time of acquisition. Therefore, most of the areas selected will be areas with a minimum of development, industry or habitation.

(e) If sufficient permanence and control by the State can be assured, the acquisition of a sanctuary may involve less than the acquisition of a fee simple interest. Such interest may be, for example, the acquisition of a conservation easement, "development rights", or other partial interest sufficient to assure the protection of the natural system. Leasing, which would not assure permanent protection of the system, would not be an acceptable alternative.

§ 921.4 Biogeographic classification.

(a) It is intended that estuarine sanctuaries should not be chosen at random, but should reflect regional differentiation and a variety of ecosystems so as to cover all significant variations. To ensure adequate representation of all estuarine types reflecting regional differentiation and a variety of ecosystems, selections will be made by the Secretary from the following biogeographic classifications:

1. *Arctician*. Northeast Atlantic coast south to Cape Cod; glaciated shoreline subject to winter icing; well developed algal flora; boreal biota.

2. *Virginian*. Middle Atlantic coast from Cape Cod to Cape Hatteras; lowland streams, coastal marshes and muddy bottoms; characteristics transitional between 1 and 3; biota primarily temperate with some boreal representatives.

3. *Carolinian*. South Atlantic coast, from Cape Hatteras to Cape Kennedy; extensive marshes and swamps; waters turbid and productive; biota temperate with seasonal tropical elements.

4. *West Indian*. South Florida coast from Cape Kennedy to Cedar Key; and Caribbean Islands; shoreland low-lying limestone; calcareous sands, marls and coral reefs; coastal marshes and mangroves; tropical biota.

5. *Louisianian*. Northern Gulf of Mexico, from Cedar Key to Mexico; characteristics of 3, with components of 4; strongly influenced by terrigenous factors; biota primarily temperate.

6. *Californian*. South Pacific coast from Mexico to Cape Mendocino; shoreland influenced by coastal mountains; rocky coasts with reduced fresh-water runoff; general absence of marshes and swamps; biota temperate.

7. *Columbian*. North Pacific coast from Cape Mendocino to Canada; mountainous shoreland; rocky coasts; extensive algal communities; biota primarily temperate with some boreal.

8. *Florida*. South coast Alaska and Aleutians; precipitous mountains; deep estuaries, some with glaciers; shoreline heavily in-

dent and subject to winter icing; biota boreal to sub-Arctic.

9. *Subarctic*. West and north coasts of Alaska; ice stressed coasts; biota Arctic and sub-Arctic.

10. *Insular*. Larger islands, sometimes with precipitous mountains; considerable wave action; frequently with endemic species; larger island groups primarily with tropical biota.

11. *Great Lakes*. Great Lakes of North America; bluff-dune or rocky, glaciated shoreline; limited wetlands; freshwater only; biota a mixture of boreal and temperate species with anadromous species and some marine invaders.

(b) Various sub-categories will be developed and utilized as appropriate.

§ 921.5 Multiple use.

(a) While the primary purpose of estuarine sanctuaries is to provide long-term protection for natural areas so that they may be used for scientific and educational purposes, multiple use of estuarine sanctuaries will be encouraged to the extent that such use is compatible with this primary sanctuary purpose. The capacity of a given sanctuary to accommodate additional uses, and the kinds and intensity of such use, will be determined on a case by case basis. While it is anticipated that compatible uses may generally include activities such as low intensity recreation, fishing, hunting, and wildlife observation, it is recognized that the exclusive use of an area for scientific or educational purposes may provide the optimum benefit to coastal zone management and resource use and may on occasion be necessary.

(b) There shall be no effort to balance or optimize uses of an estuarine sanctuary on economic or other bases. All additional uses of the sanctuary are clearly secondary to the primary purpose and uses, which are long-term maintenance of the ecosystem for scientific and educational uses. Non-compatible uses, including those uses which would cause significant short or long-term ecological change or would otherwise detract from or restrict the use of the sanctuary as a natural field laboratory, will be prohibited.

§ 921.6 Relationship to other provisions of the act and to marine sanctuaries.

(a) The estuarine sanctuary program must interact with the overall coastal zone management program in two ways:

(1) the intended research use of the sanctuary should provide relevant data and conclusions of assistance to coastal zone management decision-making, and (2) when developed, the State's coastal zone management program must recognize and be designed to protect the estuarine sanctuary; appropriate land and water use regulations and planning considerations must apply to adjacent lands. Although estuarine sanctuaries should be incorporated into the State coastal zone management program, their designation need not await the development and approval of the management program where operation of the estuarine sanctuary would aid in the development of a program.

(b) The estuarine sanctuaries program will be conducted in close cooperation with the marine sanctuaries program (Title III of the Marine Protection, Research Act of 1972, Pub. L. 92-532, which is also administered by the Office of Coastal Zone Management, NOAA), which recognizes that certain areas of the ocean waters, as far seaward as the outer edge of the Continental Shelf, or other coastal waters where the tide ebbs and flows, or of the Great Lakes and their connecting waters, need to be preserved or restored for their conservation, recreational, ecologic or esthetic values. It is anticipated that the Secretary on occasion may establish marine sanctuaries to complement the designation by States of estuarine sanctuaries, where this may be mutually beneficial.

Subpart B—Application for Grants

§ 921.10 General.

Section 312 authorizes Federal grants to coastal States so that the States may establish sanctuaries according to regulations promulgated by the Secretary. Coastal States may file applications for grants with the Director, Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, Rockville, Maryland 20852. That agency which has been certified to the Office of Coastal Zone Management as the entity responsible for administration of the State coastal zone management program may either submit an application directly, or must endorse and approve applications submitted by other agencies within the State.

§ 921.11 Application for initial acquisition, development and operation grants.

(a) Grants may be awarded on a matching basis to cover the costs of acquisition, development and operation of estuarine sanctuaries. States may use donations of land or money to satisfy all or part of the matching cost requirements.

(b) In general, lands acquired pursuant to this section, including State owned lands but not State owned submerged lands or bay bottoms, that occur within the proposed sanctuary boundary are legitimate costs and their fair market value may be included as match. However, the value of lands donated to or by the State for inclusion in the sanctuary may only be used to match other costs of land acquisition. In the event that lands already exist in a protected status, their value cannot be used as match for sanctuary development and operation grants, which will require their own matching funds.

(c) Development and operation costs may include the administrative expenses necessary to monitor the sanctuary, to ensure its continued viability and to protect the integrity of the ecosystem. Research will not normally be funded by Section 312 grants. It is anticipated that other sources of Federal, State and

private funds will be available for research in estuarine sanctuaries.

(d) Initial applications should contain the following information:

(1) Description of the proposed sanctuary include location, boundaries, size and cost of acquisition, operation and development. A map should be included, as well as an aerial photograph, if available.

(2) Classification of the proposed sanctuary according to the biogeographic scheme set forth in § 921.4.

(3) Description of the major physical, geographic and biological characteristics and resources of the proposed sanctuary.

(4) Identification of ownership patterns; proportion of land already in the public domain.

(5) Description of intended research uses, potential research organizations or agencies and benefits to the overall coastal zone management program.

(6) Demonstration of necessary authority to acquire or control and manage the sanctuary.

(7) Description of proposed management techniques, including the management agency, principles and proposed budget including both State and Federal shares.

(8) Description of existing and potential uses of and conflicts within the area if it were not declared an estuarine sanctuary; potential use, use restrictions and conflicts if the sanctuary is established.

(i) Assessment of the environmental and socio-economic impacts of declaring the area an estuarine sanctuary, including the economic impact of such a designation on the surrounding community and its tax base.

(9) Description of planned or anticipated land and water use and controls for contiguous lands surrounding the proposed sanctuary (including if appropriate an analysis of the desirability of creating a marine sanctuary in adjacent areas).

(10) List of protected sites, either within the estuarine sanctuaries program or within other Federal, State or private programs, which are located in the same regional or biogeographic classification.

(i) It is essential that the opportunity be provided for public involvement and input in the development of the sanctuary proposal and application. Where the application is controversial or where controversial issues are addressed, the State should provide adequate means to ensure that all interested parties have the opportunity to present their views. This may be in the form of an adequately advertised public hearing.

(ii) During the development of an estuarine sanctuary application, all landowners within the proposed boundaries should be informed in writing of the proposed grant application.

(iii) The application should indicate the manner in which the State solicited the views of all interested parties prior to the actual submission of the application.

(e) In order to develop a truly representative scheme of estuarine sanctuaries,

the States should attempt to coordinate their activities. This will help to minimize the possibility of similar estuarine types being proposed for designation in the same region. The application should indicate the extent to which neighboring States were consulted.

(f) Discussion, including cost and feasibility, of alternative methods for acquisition, control and protection of the area to provide similar uses. Use of the Marine Sanctuary authority and funds from the Land and Water Conservation Fund Act should be specifically addressed.

§ 921.12 Application for subsequent development and operation grants.

(a) Although the initial grant application for creation of an estuarine sanctuary should include initial development and operation costs, subsequent applications may be submitted following acquisition and establishment of an estuarine sanctuary for additional development and operation funds. As indicated in § 921.11, these costs may include administrative costs necessary to monitor the sanctuary and to protect the integrity of the ecosystem. Extensive management programs, capital expenses, or research will not normally be funded by section 312 grants.

(b) After the creation of an estuarine sanctuary established under this program, applications for such development and operation grants should include at least the following information:

(1) Identification of the boundary.

(2) Specifications of the management program, including managing agency and techniques.

(3) Detailed budget.

(4) Discussion of recent and projected use of the sanctuary.

(5) Perceived threats to the integrity of the sanctuary.

§ 921.13 Federally owned lands.

(a) Where Federally owned lands are a part of or adjacent to the area proposed for designation as an estuarine sanctuary, or where the control of land and water uses on such lands is necessary to protect the natural system within the sanctuary, the State should contact the Federal agency maintaining control of the land to request cooperation in providing coordinated management policies. Such lands and State request, and the Federal agency response, should be identified and conveyed to the Office of Coastal Zone Management.

(b) Where such proposed use or control of Federally owned lands would not conflict with the Federal use of their lands, such cooperation and coordination is encouraged to the maximum extent feasible.

(c) Section 312 grants may not be awarded to Federal agencies for creation of estuarine sanctuaries in Federally owned lands; however, a similar status may be provided on a voluntary basis for Federally owned lands under the provisions of the Federal Committee on Ecological Preserves program.

Subpart C—Selection Criteria

§ 921.20 Criteria for selection.

Applications for grants to establish estuarine sanctuaries will be reviewed and judged on criteria including:

(a) Benefit to the coastal zone management program. Applications should demonstrate the benefit of the proposal to the development or operations of the overall coastal zone management program, including how well the proposal fits into the national program of representative estuarine types; the national or regional benefits; and the usefulness in research.

(b) The ecological characteristics of the ecosystem, including its biological productivity, diversity and representativeness. Extent of alteration of the natural system, its ability to remain a viable and healthy system in view of the present and possible development of external stresses.

(c) Size and choice of boundaries. To the extent feasible, estuarine sanctuaries should approximate a natural ecological unit. The minimal acceptable size will vary greatly and will depend on the nature of the ecosystem.

(d) Cost. Although the Act limits the Federal share of the cost for each sanctuary to \$2,000,000, it is anticipated that in practice the average grant will be substantially less than this.

(e) Enhancement of non-competitive uses.

(f) Proximity and access to existing research facilities.

(g) Availability of suitable alternative sites already protected which might be capable of providing the same use or benefit. Unnecessary duplication of existing activities under other programs should be avoided. However, estuarine sanctuaries might be established adjacent to existing preserved lands where mutual enhancement or benefit of each might occur.

(h) Conflict with existing or potential competing uses.

(i) Compatibility with existing or proposed land and water use in contiguous areas.

If the initial review demonstrates the feasibility of the application, an environmental impact statement will be prepared by the Office of Coastal Zone Management in accordance with the National Environmental Policy Act of 1969 and implementing CEQ guidelines.

§ 921.21 Public participation.

Public participation will be an essential factor in the selection of estuarine sanctuaries. In addition to the participation during the application development process (§ 921.11(e)), public participation will be ensured at the Federal level by the NEPA process and by public hearings where desirable subsequent to NEPA. Such public hearings shall be held by the Office of Coastal Zone Management in the area to be affected by the proposed sanctuary no sooner than 30 days after it issues a draft environmental impact

statement on the sanctuary proposal. It will be the responsibility of the Office of Coastal Zone Management, with the assistance of the applicant State, to issue adequate public notice of its intention to hold a public hearing. Such public notice shall be distributed widely, especially in the area of the proposed sanctuary; affected property owners and those agencies, organizations or individuals with an identified interest in the area, or estuarine sanctuary program shall be notified of the public hearing. The public notice shall contain the name, address and phone number of the appropriate Federal and State officials to contact for additional information about the proposal.

Subpart D—Operation

§ 921.30 General.

Management of estuarine sanctuaries shall be the responsibility of the applicant State or its agent. However, the research uses and management program must be in conformance with these guidelines and regulations, and others implemented by the provisions of individual grants. It is suggested that prior to the grant award, representatives of the proposed sanctuary management team and the Office of Coastal Zone Management meet to discuss management policy and standards. It is anticipated that the grant provisions will vary with individual circumstances and will be mutually agreed to by the applicant and

the granting agency. As a minimum, the grant document for each sanctuary shall:

- (a) Define the intended research purposes of the estuarine sanctuary.
- (b) Define permitted, compatible, restricted and prohibited uses of the sanctuary.
- (c) Include a provision for monitoring the uses of the sanctuary, to ensure compliance with the intended uses.
- (d) Ensure ready access to land use of the sanctuary by scientists, students and the general public as desirable and permissible for coordinated research and education uses, as well as for other compatible purposes.
- (e) Ensure public availability and reasonable distribution of research results for timely use in the development of coastal zone management programs.
- (f) Provide a basis for annual review of the status of the sanctuary, its value to the coastal zone program.
- (g) Specify how the integrity of the system which the sanctuary represents will be maintained.
- (h) Provide adequate authority and intent to enforce management policy and use restrictions.

§ 921.31 Changes in the sanctuary boundary, management policy or research program.

- (a) The approved sanctuary boundaries; management policy, including permissible and prohibited uses; and re-

search program may only be changed after public notice and the opportunity of public review and participation such as outlined in § 921.21.

- (b) Individuals or organizations which are concerned about possible improper use or restriction of use of estuarine sanctuaries may petition the State management agency and the Office of Coastal Zone Management directly for review of the management program.

§ 921.32 Program review.

It is anticipated that reports will be required from the applicant State on a regular basis, no more frequently than annually, on the status of each estuarine sanctuary. The estuarine sanctuary program will be regularly reviewed to ensure that the objectives of the program are being met and that the program itself is scientifically sound. The key to the success of the estuarine sanctuaries program is to assure that the results of the studies and research conducted in these sanctuaries are available in a timely fashion so that the States can develop and administer land and water use programs for the coastal zone. Accordingly, all information and reports, including annual reports, relating to estuarine sanctuaries shall be part of the public record and available at all times for inspection by the public.

[FR Doc.74-12773 Filed 5-31-74; 9:57 am]

APPENDIX II

Estuarine Sanctuary Research Program



STATE OF
WASHINGTON
Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY

Mail Stop PV-11
Olympia, Washington 98504

206/753-2800

October 8, 1979

M E M O R A N D U M

TO: Mr. Wilbur G. Hallauer, Director
Department of Ecology

FROM: Ralph Larson, Chairman-P.B.E.S. Steering Committee
-Director of Department of Game
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-Director, Western Washington University, Sundquist
Marine Studies Laboratory
Dr. Carl Nyblade, Co-Chairman-P.B.E.S. Research Sub-Committee
-Researcher, University of Washington-Friday Harbor Marine
Laboratory

SUBJECT: The Proposed P.B.E.S. Final-Approved Research Program
Report October 4, 1979

Enclosed is the final report for the proposed Padilla Bay Estuarine Sanctuary Research program. The report was approved and adopted by the P.B.E.S. Technical Committee on September 14, 1979, and approved by the Steering Committee on October 4, 1979.

RL:CJF:CN:s
enclosure

Padilla Bay Estuarine Sanctuary

Research Program Report

Final Draft

Section I. INTRODUCTION

An estuary is that part of a river or stream having an unimpaired connection with the open sea where the seawater is measurably diluted with freshwater derived from land drainage. Historically, Padilla Bay was a true estuary, part of the large Skagit River Delta. However, the bay is no longer connected to the Skagit River system and at present has only minor freshwater inflow from land drainage. Today Padilla Bay is more properly considered a large marine bay. As such, it is without question a prime area for a sanctuary, set aside to provide scientists and students the opportunity to examine over a period of time the ecological relationships within the area. Although some measurable human disturbance such as channel maintenance dredging and diking land reclamation has occurred to Padilla Bay and continues, the bay as a natural ecosystem largely remains intact and in a natural state.

The natural ecological unit definition of Padilla Bay would be all the waters enclosed east of a line from the west end of Samish Island to March Point, perhaps with the exception of deep water areas (greater than 18 fathoms) between March Point and Hat Island, and the associated wetlands including the sloughs. In order to optimally manage the Padilla Bay estuarine sanctuary and to protect its integrity, the management boundary should follow the natural ecological unit. However, the manage-

ment boundary need not necessarily be identical to the land acquisition boundary.

Section II. LONG-TERM RESEARCH PROGRAM

II-A. Historical Research Summary

Table I presents a listing of all recent research programs known to have taken place in Padilla Bay. Although this is a fairly long list it is clear that only the marine birds have received long-term quantitative study. Mammals, fish, and the marine benthos have received only short-term quantitative study, while the epibenthos, plankton, and associated wetland benthos have received no study at all. Especially noteworthy is the absence of productivity studies, energy flow studies, food web syntheses, or any attempt to treat the Padilla Bay ecosystem as an integrated whole.

Beyond these biotic studies, little or no work has been done on the abiotic Padilla Bay system (beach-bay sediment studies, geomorphology, physical and chemical oceanography of bay waters) and on the human impacts on or perturbation of the bay (dredging for channel maintenance; harvest of birds, fish, and shellfish; municipal and industrial water pollution; agricultural runoff pollution).

In spite of major gaps in the existing data base for Padilla Bay, it is clear that the bay is a highly productive area which supports a diverse and complex community of organisms. Table II presents a partial listing of this community with special emphasis on the variety of species of importance to man.

Table I. Historical Research Programs in Padilla Bay

<u>Type of Sampling</u>	<u>Agency(s)</u>	<u>Date(s)</u>	<u>Investigator</u>
Sulfite Waste (water quality)	Fish & Wildlife Ser. WDF	1946	Saxton-Young
Industrial Waste (water quality)	Pollution Control Commission	1957	Al Neale
Oyster (water quality)	Pollution Control Commission	1952	Al Neale
Oyster (water quality)	WDF	1950	Orlob-Neale-Lindsay
Eelgrass	WDG/Funded by Fish & Wildlife Serv.	1971-1975	Bob Jeffrey
Intertidal Benthos	WWU Huxley College	1974-75, 1979	Webber-Smith
Subtidal-Eelgrass Benthos	WWU Huxley College	1976	Webber-Smith
Beach Seine (fish)	WWU Huxley College	1974-75	Webber-Smith
Marine Birds	WDG + funded by U.S. FW Service	1965-79	Jeffrey-Parker

Marine Birds	John Graham Co. Funded by ACOE	1977-78	Peters-Richter
Marine Birds	U.W. funded by EPA thru NOAA (MESA)	1978-79	Manuwal-Wahl
Marine Mammals	NMFS funded by NOAA (MESA)	1977-79	Robert Everitt
Land Use/Land Cover	WDG funded by OCZM thru DOE	1978	Rick Albright
Drift Sectors	John Norman Assoc. funded thru DOE	1977	John Norman
Inventory of com- pilation of Biota (Data)	WWU Huxley College WDF, WDG	1976	Edited by Jeffrey
Inventory of com- pilation of Biota (Data)	WDF	1977	Sweeney

Table II. Padilla Bay Flora and Fauna (Partial List)

<u>Organism</u>	<u>Number of Species</u>	<u>Peak Population</u>	<u>Comments</u>
Marine Mammals			
harbor seals	1	77	Haulout area for 5-10% of total North Puget Sound population.
Birds	110+		
great blue heron		100-200 pairs	Samish Is. rookery
glaucus-winged gulls		500 pairs	nesting colony on Swinomish Slough dredge spoil islands.
bald eagle		4 active nests	
merlin		high number	
peregrine falcon		in winter	
dabbling ducks	44% widgeon	36,000+	
	3% pintail		
	14% mallard		
	11% green-winged teal		
diving ducks		20,000+	
scaup		10,000+	
brant		50,000+	In April perhaps a third of the entire Pacific flyway brant are on the bay.

II-B. Research Program Proposal

As set forth in Section 315 of the Coastal Zone Management Act estuarine sanctuaries are "to serve as natural field laboratories in which to study and gather data on the natural and human processes occurring within the estuaries of the coastal zone." While long-term protection of Padilla Bay alone, allowing others to conduct studies, would satisfy in a narrow sense this primary sanctuary goal, the Research Program Subcommittee recommends that the sanctuary management plan include a detailed long-term research program. To facilitate development of this plan we propose the following plan in outline form:

I. Natural Processes

A. Biotic

1. Ecosystem Structure

a. Marine Mammals

- (1) Harbor seals (Phoca vitulina richardsi): continue 1977-79 Everitt et al population monitoring by shore based and/or aerial censusing; determine diet by analysis of fecal material.

Fish**13+**

pink salmon	nursery
chum salmon	area
coho salmon	migration route
chinook salmon	through the bay
English sole	
starry flounder	nursery area
surf smelt	
herring	

Benthic Invertebrates**103+**

cockle	432×10^6	
native little neck clam	31×10^6	harvested shellfish
eastern soft shell clam	$1,200 \times 10^6$	
red rock crab		
Dungeness crab		

Benthic Plants**9+**

eelgrass	0.5×10^6 tons
----------	------------------------

b. Marine Birds

- (1) Continue marine bird censusing format of Manuwal-Wahl 1978-1979.
- (2) Species specific studies to document life history, behavior, diet, sources of mortality, ecosystem role of: brant, great blue heron, peregrine falcon, bald eagle, glaucous-winged gull, double-crested cormorant.
- (3) Determine community role of shore birds; dabbling ducks, diving ducks, brant, gulls, heron, and raptors.

c. Fish

- (1) Salmonids - species and their river of origin; distribution and abundance (including year to year variation) within the bay by area, habitat, depth; residence time; diet; growth rate; mortality rate and causes.

- (2) Non-salmonids: continue and expand on beach seine censusing (Webber & Smith, 1974-75), and census by tow net, trammel net, and trawl to determine seasonal and year to year distribution and abundance of fish populations.

d. Epibenthos

- (1) Large: using trawls determine seasonal and year to year distribution and abundance.
- (2) Small: using an epibenthic pump determine seasonal and year to year distribution and abundance.

e. Benthos

- (1) Marsh: using standard DOE sampling methodology, determine seasonal and year to year distribution and abundance.
- (2) Intertidal: continue Webber-Smith sampling (1974-75, 1979) and add more sites to determine seasonal and year to year distribution and abundance using DOE standard methodology.

- (3) Subtidal: using Smith (1976) airlift methodology determine seasonal and year to year distribution and abundance.

f. Plankton

- (1) Document seasonal and year to year distribution and abundance of ichthyoplankton, benthic larval forms, holo zooplankton, phytoplankton, and nanoplankton.

2. Ecosystem Function

a. Energy flow

- (1) Primary production of phytoplankton, benthic macro- and microalgae, eelgrass, and marsh grasses.
- (2) Detrital imports into system.
- (3) Secondary and tertiary production - Padilla Bay food web.
- (4) Exports from bay.

- b. Roll of top carnivores (keystone species) in maintenance of community structure. Determine by inclusion and exclusion caging studies.

B. Abiotic

1. Water

- a. Water chemistry
- b. Freshwater (annual) budget
- c. Circulation within bay: surface and subsurface
- d. Exchange - flushing rate

2. Sediment

- a. Types and distribution
- b. Source
- c. Transport
- d. Shoreforms

II. Human Processes: Environmental and Economic Effects of the Following
Should be Determined.

A. Water Pollution

1. Agricultural runoff-fertilizer, pesticides, and herbicides.
2. Municipal storm and sanitary sewer outflow, if any.
3. Chronic low-level discharge of crude and refined oil from refinery operations, if any.

B. Shore and Bay Bottom Modification

1. Diking and draining of associated wetlands for agricultural usage.
2. Swinomish Slough Channel maintenance by dredging and dredge spoil disposal.
3. Log rafting.

C. Animal Harvesting

1. Waterfowl hunting

2. Fishing for salmon and bottom fish
 3. Crab fishing (Cancer magister)
 4. Eastern soft shell clam (Mya arenaria)
 5. Native littleneck clam (Protothaca staminea)
 6. Aquaculture: oyster
- D. Nonconsumptive Recreational Uses: boating, beach walking, bird watching, etc.

It is clear that a research program of this magnitude could not be funded by a single agency or at a single time. It is essential, therefore, that the major duty of the Padilla Bay Estuarine Sanctuary director should be implementation and coordination of the research program. The following list would be a starting point for support of the research program.

List of Potential and Committed Research Organizations
and Research Funding Sources

National Marine Fisheries Service
U.S. Fish & Wildlife Service
National Science Foundation

Army Corps of Engineers

National Oceanographic & Atmospheric Administration

University of Washington

Western Washington University

Huxley College of Environmental Studies

Washington State Department of Game

Washington State Department of Fisheries

Washington State Department of Ecology

City of Anacortes

Shell and Texaco Oil Refineries

Section III. COMPATIBLE/NONCOMPATIBLE USES

The primary purpose of estuarine sanctuaries is the long-term maintenance of ecosystems for scientific and educational uses. However, the Coastal Zone Management Act states that "multiple use of estuarine sanctuaries will be encouraged to the extent that such use is compatible with the primary sanctuary purpose." It is clear that long-term protection does not mean the exclusion of all human activities. However, it is equally clear that any activity destructive to the Padilla Bay natural ecosystem is noncompatible and must be prohibited.

Instead of a specific list of permitted and prohibited uses, we propose the following guidelines:

1. All current human uses of the Padilla Bay Estuarine Sanctuary management area should be allowed to continue until such time as a management authority determines that a given activity is destructive to the sanctuary based on site specific scientific data.
2. Any new activity proposed in the management area should require an environmental assessment based on scientific data and sanctuary management approval prior to being allowed.

In this manner it is hoped that the public sector will enjoy maximum multiple use benefit from the sanctuary while at the same time deriving the scientific and educational benefits from an estuary preserved forever.

Section IV. RESEARCH FACILITIES

The Padilla Bay area is blessed by the presence of two excellent marine laboratories: Western Washington University's Sundquist Marine Studies Laboratory and the University of Washington's Friday Harbor Laboratories. Between them they provide admirable facilities for a wide range of marine reserach and would be able to provide adequate support facilities for the research program. If an interpretive center is built on the bay, it would be convenient if it had some support capacity for field studies: small boat launching ramp; limited, secure storage area; showers.

APPENDIX III

Estuarine Sanctuary Educational Program



STATE OF
WASHINGTON
Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY
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October 8, 1979

M E M O R A N D U M

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Department of Ecology

FROM: Ralph Larson, Chairman-P.B.E.S. Steering Committee
-Director of Department of Game
Dr. James M. Ford, P.B.E.S. Co-Chairman Education
Sub-Committee-President, Skagit Valley College
David A. Kennedy, P.B.E.S. Co-Chairman Education
Sub-Committee-Supervisor, Science and Environmental
Education Programs-State Superintendent of Public
Instruction

SUBJECT: The Proposed P.B.E.S. Final-Approved Education Program
Report-October 4, 1979

Enclosed is the final report for the proposed Padilla Bay Estuarine Sanctuary Education program. The report was approved and adopted by the P.B.E.S. Technical Committee on September 14, 1979, and approved by the Steering Committee on October 4, 1979.

RL:JF:DAK:s
enclosure

PADILLA BAY ESTUARINE SANCTUARY

EDUCATION PLAN

SEPTEMBER 1979

Prepared by...

WASHINGTON SUPERINTENDENT OF
PUBLIC INSTRUCTION
DAVID KENNEDY, PRINCIPAL INVESTIGATOR

Contributors...

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INTRODUCTION

A component of education takes place where the learner is able to experience the environment or topic being studied in an interactive way. Our experience and knowledge of educational practice based on research indicates that learning about natural resources, conservation, scientific, social and technological topics cannot be limited to verbal discourse. Many of the physical activities associated with those learnings must be accomplished beyond the walls of the home or classroom. This kind of education demands that educators extend learning experiences into the community.

We are fortunate to have the potential of the proposed Padilla Bay Estuarine Sanctuary as a learning resource for both formal education programs that are conducted by colleges, community colleges, universities and the common schools, and for nonformal interpretive or public information/educational opportunities that are the responsibility of resource management agencies.

With the opportunity of utilizing the Padilla Bay environment as a learning resource, the achievement in some measure of the following four goals is our intent:

1. An accurate and comprehensive grounding in how the estuarine environment works
2. Experience in valuing environmental quality
3. Experience in how personal choices and actions affect environmental quality
4. Experience in methods of enacting community responsibility

THE FOUR SYSTEMS

This plan consists of four major systems; The Governance System is composed of decision-making structures which legitimize activities and govern them. The Substantive System is composed of the content and process of learning and deals with the definition of what is learned and how it is learned. The Development System is a cyclic, sequential approach to the construction and testing of necessary program materials and instructional strategies for both formal and nonformal education endeavors. The Delivery System provides a thoughtful analysis of the requirements and strategies essential to the long term operation and support of the proposed Padilla Bay Education Program.

PADILLA BAY ESTUARINE SANCTUARY

EDUCATION PLAN

THE GOVERNANCE SYSTEM

G-1) Objective

Develop an awareness of the importance of the estuarine resource and its concomitant values as they relate to the environment, and to the economic and sociological health of the region and the state.

G-2) Authority

No single piece of legislation serves to provide comprehensive legal authority for educational programs dealing with the environment. Yet, public policy is full of citations which mandate or enable educational programs as a component of their charge. Those few which are cited here provide significant direction and influence in the establishment and operation of endeavors related to education about the estuarine environment:

- Each school district must make Environmental Education available in the secondary program.*

*Washington Administrative Code
180-56-026
High School Graduation Requirements*

- As a result of the process of education, all students should appreciate the wonders of the natural world, human achievements and failures, dreams and capabilities.*

*Washington State Board of Education
Goals for the Washington Common Schools*

- The Washington State Shorelines Management Act of 1971*
- The Washington State Environmental Policy Act of 1971*
- The Federal Coastal Zone Management Act of 1972, PL 92-583*
- National Environmental Education Act of 1970, PL 92-516, amended by PL 93-278*

- *National Sea Grant College and Program Act of 1966, PL 89-688, PL 89-454*
- *National Sea Grant Improvement Act of 1976, PL 94-461*
- *Marine Mammal Protection Act of 1972*
- *Special Projects Act, Title IV, Sections 405 and 406 of the Education Amendments of 1974, PL 93-380*
- *Refuse Act (Rivers and Harbors Act) of 1899*
- *The Act of August 25, 1916, PL 64-235 Enabling Environmental Study Areas*
- *Marine Protection, Research and Sanctuaries Act of 1972*
- *Fish and Game Sanctuary Act of 1916*
- *National Foundation on the Arts and Humanities Act of 1965, PL 89-209*
- *National Science Foundation Act of 1950, PL 81-507*
- *Federal Water Pollution Control Act of 1956, PL 92-500, and Amendments of 1961*
- *Water Quality Act of 1966 and Amendments of 1972*
- *Land and Water Conservation Fund Act of 1965*
- *National Environmental Policy Act of 1969*
- *The Wilderness Act of 1964*
- *The Endangered Species Preservation Act of 1973*
- *The Resolution of the 1972 Stockholm Conference on the Human Environment*
- *The Resolutions of the 1975 Kyoto Conference on the Human Environment*
- *Resolutions of the U. N. Conference on Water at Mar del Plata, Argentina 1977*
- *Resolutions of the U. N. Conference on Environmental Education at Tbilisi, Russia, in 1977*

G-3) Philosophy

Assist learners and the general public to understand that the fundamental goal is management of the estuarine ecosystem at the level of best ecosystem function, which usually means as near to the natural condition as possible. To paraphrase Aldo Leopold's Sand County Almanac:

Quit thinking about use of estuaries as solely an economic problem. Examine each question in terms of what is ethically and aesthetically right as well as what is economically expedient. A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic (estuarine) community. It is wrong when it tends otherwise.

G-4) Management Plan

TASK	Year 1 Quarter				Year 2 Quarter				Year 3 Quarter				Year 4 Quarter			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Appoint Advisors to 18 Month Terms	x				x				x						x	
Advisors Meet	x	x	x	x	x	x	x		x	x			x	x	x	
Select & Hire Educational Manager				x												
Inventory Site	x	x	x	x												
Plan for Programs				x												
Plan for Facilities				x												
Contact Schools & Colleges				x												
Develop Program Materials				x												
Field Test Educational Program Materials								x								
Construct Facilities								x								
Develop Trail System								x								
Conduct Teacher Workshops								x								
Deliver Educational Programs and Services								x								
Apply for NESA Status									x							
Apply for ELC Status									x							
Develop Formal Evaluation Program				x												

G-5) *Points of interaction with all parties*

Cooperation among the various kinds of groups, as indicated by the following diagram, is an essential facet of this plan. The state agency managing the physical facility will have the responsibility for the coordination of interrelating components within and among the participating groups. Education programs will be managed by the Washington Superintendent of Public Instruction's Office of Environmental Education, Northwest Section.

Cooperative activities will be accomplished between and among these groups in support of the overall goal of developing and operating effective education programs treating the importance of the estuarine resource.

G-6 *Advisory Activities*

An advisory group will be established to provide counsel regarding all components of educational program activities on and related to the site.

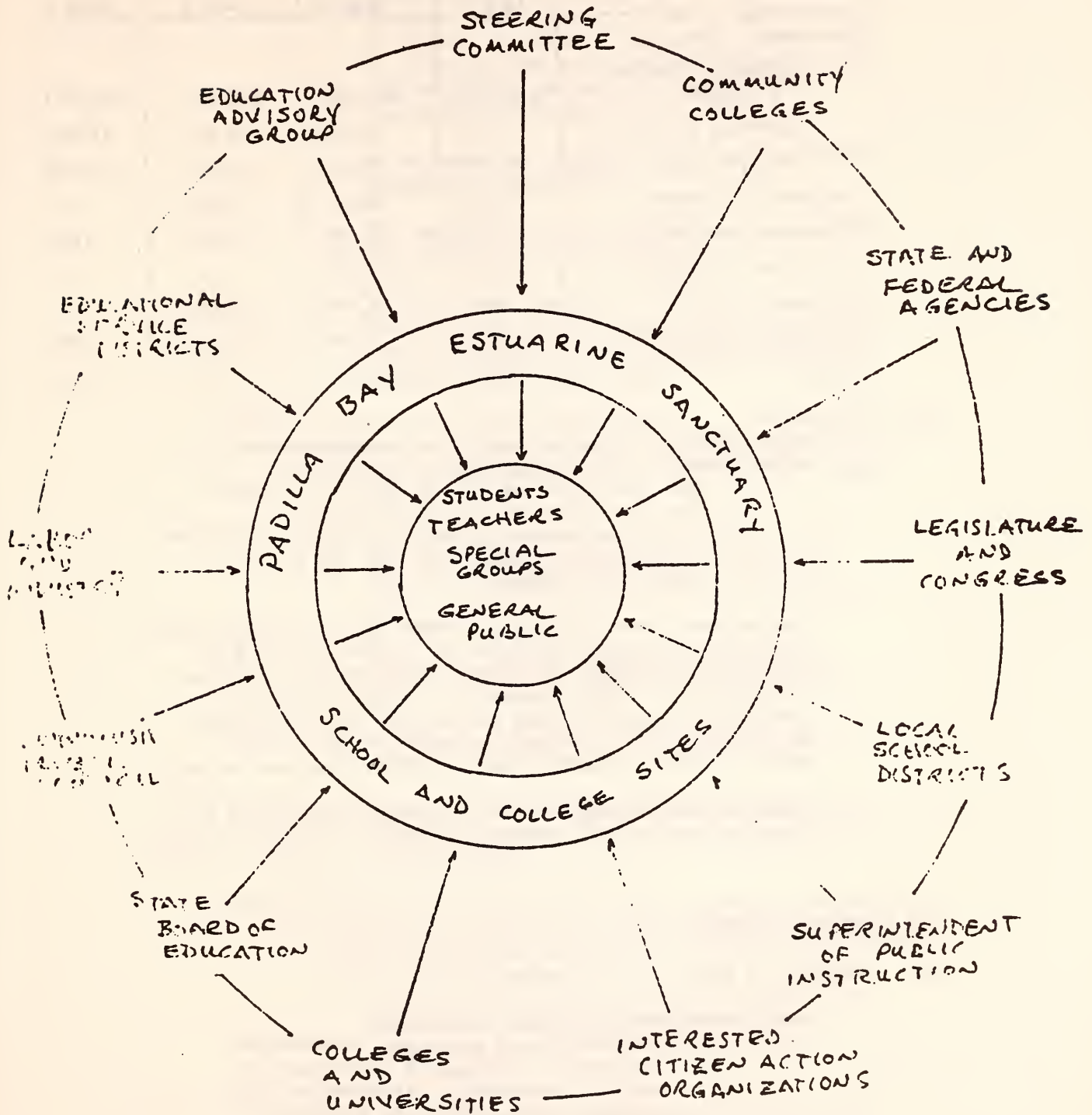
The Steering Committee will have the responsibility of appointing personnel representing, but not limited to, the following generic categories:

- Colleges and Universities*
- Community Colleges*
- Citizen Conservation Groups*
- Business and Industry*
- State Government Resources Management Agencies*
- Federal Government Resources Management Agencies*
- Local School Districts*
- State Superintendent of Public Instruction*
- Local Citizens Organizations*

G-7 *Interpretive Center*

A physical facility is required to provide offices, group meeting space, shelter, equipment storage, aquaria, display, sanitation, and work space for education, interpretation, and research functions. This facility should be planned to function in a most flexible multipurpose fashion. In addition, a system of trails and access sites will be developed.

COOPERATIVE INTERACTION
SUPPORTING
FORMAL AND NON-FORMAL EDUCATION



G-8) Budget

	Year 1	Year 2	Year 3	Year 4
<i>Personnel</i>				
<i>Education Manager</i> @ \$22,000	\$16,500	\$22,000	\$22,000	\$22,000
<i>Clerical @ 12,000</i>	9,000	12,000	12,000	12,000
<i>Interpretive @ 18,000</i>	4,500	18,000	18,000	18,000
<i>Program Development</i>	10,000	30,000	5,000	---
<i>Interpretive/Display</i>	---	5,000	5,000	5,000
<i>Facilities & Trails</i>	---	250,000	---	---
<i>Equipment</i>	---	40,000	10,000	---
<i>Inservice Education</i>	---	5,000	10,000	5,000
<i>Travel</i>	4,000	5,000	5,000	3,000

G-9) Evaluation

This governance level assesses the appropriateness and effectiveness of program delivery in regard to:

1. *The administration of the education program*
2. *The curriculum and program materials*
3. *The effectiveness of instruction/interpretation*
4. *The outcomes of education from the point of view of the learner*

Evaluation is particularly a concern at the administration level where the major question is whether or not the strategies developed to delivery learning opportunities are effective. This necessitates that criteria be developed to determine the adequacy of the curriculum and instruction. The basic question at the learner level is whether student learning objectives are achieved.

A comprehensive program will be developed to assess all these aspects of the estuarine sanctuary education program.

THE SUBSTANTIVE SYSTEM

S-1) Identifying what is to be learned

Help Individuals and Groups Understand:

1. *The fundamentals of an estuary environment*
 - A. *The earth's environment constitutes a complex-interrelated, interactive life support system called the ecosphere*
 - B. *The ecosphere is a dynamic constantly changing macro system...a mosaic of ecosystems*
 - C. *An estuary is an ecosystem*

- D. Each estuary (ecosystem) is composed of three groups of components: 1) physical factors (sun's energy, climate, water, etc.); 2) Living organisms, including humans; and 3) interactions among and/or between living and nonliving components (competition, decomposition, energy flow, etc.)
- E. An estuary and all its subsystems undergo continuous change
- F. The energy and materials necessary for life are components of an estuary
- G. Each estuary includes a number of species populations, the size and stability of which vary, depending on the biotic and abiotic changes within the system

Help Individuals and Groups Understand:

- 2. Humans as components of an estuarine environment
 - A. Humans use estuaries to satisfy basic needs and desires
 - B. Humans affect estuaries by their special type of ecological dominance, exerting major kinds of influences on the estuarine ecosystem
 - C. Estuaries affect humans as arenas where human perception and activity take place
 - D. Complex interactions among humans and other estuarine components occur continuously
 - E. Humans have a responsibility to produce an ethic of accountability for human impacts on estuaries

Help Individuals and Groups Understand, Develop and Support:

- 3. Methods for harmonizing human activities with estuary ecosystem processes to achieve environmental quality
 - A. The methods by which human activities are harmonized with estuarine ecosystem processes are complex and not always predictable
 - B. Institutions, processes and attitudes for implementing investigative, preventative, remedial and creative actions that will harmonize human activities with estuarine ecosystem processes are:

1. Educational
 2. Religious, Aesthetic, Ethical & Moral
 3. Scientific and Technological
 4. Civic and Social
 5. Governmental and Political
 6. Industrial and Commercial
- C. Harmonize human activities with estuary ecosystem processes by adjusting perceived imbalances, identifying and addressing problems, and utilizing opportunities through institutions and individuals.
1. Investigating ecosystem processes and components, with emphasis on the results of human activities on estuaries and the influence of estuaries on human functioning
 2. Recognizing the importance of ecosystem processes and the significance of estuary changes
 3. Identifying the causes of estuarine changes and their consequences
 4. Arranging alternative action strategies that would maintain and enhance beneficial estuarine changes and would stop or reduce detrimental changes, with a special attention to irreversible/irretrievable changes, and to long range vs. short range commitments of resources
 5. Analyzing and evaluating alternatives within a broad array of environmental, social and economic criteria, recognizing that criteria and values will differ according to the circumstances of politics, scale, time, and society
 6. Selecting among alternatives and adopting a policy
 7. Choosing and implementing actions to carry out policy
 8. Monitoring and evaluating the effects of implemented policies and actions
- D. Increasing the scientific knowledge of ecosystem processes related to estuaries; increase citizen awareness of ecosystem dysfunctions

S-2) Identifying how that learning can occur

A Teaching/Learning Model

In the process of developing plans of this type, a good deal of discussion and research has taken place on the nature of teaching and learning. From this, an outline was developed which can be used for assessing the usefulness of learning activities on the basis of whether they stimulated learning and/or enhanced teaching. It is a simple, practical guide for aiding in assessing the activities selected for introducing ecosystem/estuary concepts into learning programs.

Start with the definition of learning:

Learning is change of perception

Which stimulates skill-building

To effect responsible action

Next we search for contexts within which perceptions are explored/stretched; skills development is invited and; responsibility and action is encouraged. The latter two requirements are very much dependent on the first, so for our present purposes, we'll focus mostly on content acquisition and perception. We will see, however, that learning evolves along those dimensions. Thus, once perceptions are changed, skills and action will follow, if there is opportunity.

Back to perception. We very often have our perceptions jarred when we "fool around with data". Our model for teaching/learning will focus on something we like to call "Data Dealin'". There are three levels in the Data Dealin' process: Diggin' (information gathering); Dancin' (mucking about with information); Decidin' (going beyond understanding to transfer, and application to a new sector of life).

Since education is a two-way street, we also recognize there are two processes important to Data Dealin' in the classroom: Teachering (providing opportunity) and Studenting (levels of understanding).

Teachering is managing resources, settings, spaces, materials, time, media and information so that studenting occurs.

Studenting is engaging in situations where perceptions are important. Studenting exercises old skills, builds new ones and initiates personally motivated actions. Studenting is an interdependent progression of awareness, exploration and extension. It recycles; an "old" extension leads to a "new" awareness.

Now let's look at how teachering and studenting fit into Data Dealin'. For simplicity, we have put it into chart form.

DATA DEALIN'

LEVELS OF

TEACHING (Opportunity)

INVOLVEMENT

STUDENTING (Understanding)

Data Diggin'

EXPOSURE

Creating opportunities for students to be exposed to and gather data.

Sources: Books, newspapers, films, other media, people, self, memory, parks, mountains, estuaries, schools, other places, etc., etc.

Gathering processes: Taking pictures, interviews, measuring, counting, imagining, remembering, personal visits, etc.

Expressions: Essays, graphs, murals, photography, mobiles, poems, plays, body movement, drawings, bumper stickers, T-shirts, etc.

AWARENESS

Developing an awareness by simply data gathering, absorbing and expressing.

Data Dancin'

EXPERIENCE

Providing the opportunity for studenting; for the mucking with information and challenging it to become meaningful; for experiencing.

Data structuring, organizing, displaying, extrapolating, comparing, analyzing, synthesizing, structure destroying, impeaching, force fitting, randomizing, debating, etc.

EXPLORATION

Exploration of the data.

Data Decidin'

INVITATION

Inviting growth, change and action; applying the Data Dealin' to a new sector of the home, school, neighborhood, state, universe; recycling the new data by following the Data Dealin' process again with the same activity; Data Diggin' Deeper.

Extension through action based on personal motivation, according to what the data has told you or going beyond the data to the infinitive places. This is an unpredictable process which requires ownership and the responsibility to live with the consequences.

EXTENSION

Extension; data decision doing.

S-3 Define the education audiences

- a. Students from Kindergarten through Grade 12 in both Public and Private Education*
- b. Teachers*
- c. College, Community College, and University Students*
- d. General Public*
- e. Special Interest Groups*

THE DEVELOPMENT SYSTEM

Program materials will be developed which support the achievement of the previously stated substantive objectives. The systematic approach we will use to develop these essential materials is outlined on the following page. This basic procedure has been used successfully by the Office of the Superintendent of Public Instruction in numerous projects, and we consider it thoroughly research-tested and optimally effective.

THE DELIVERY SYSTEM

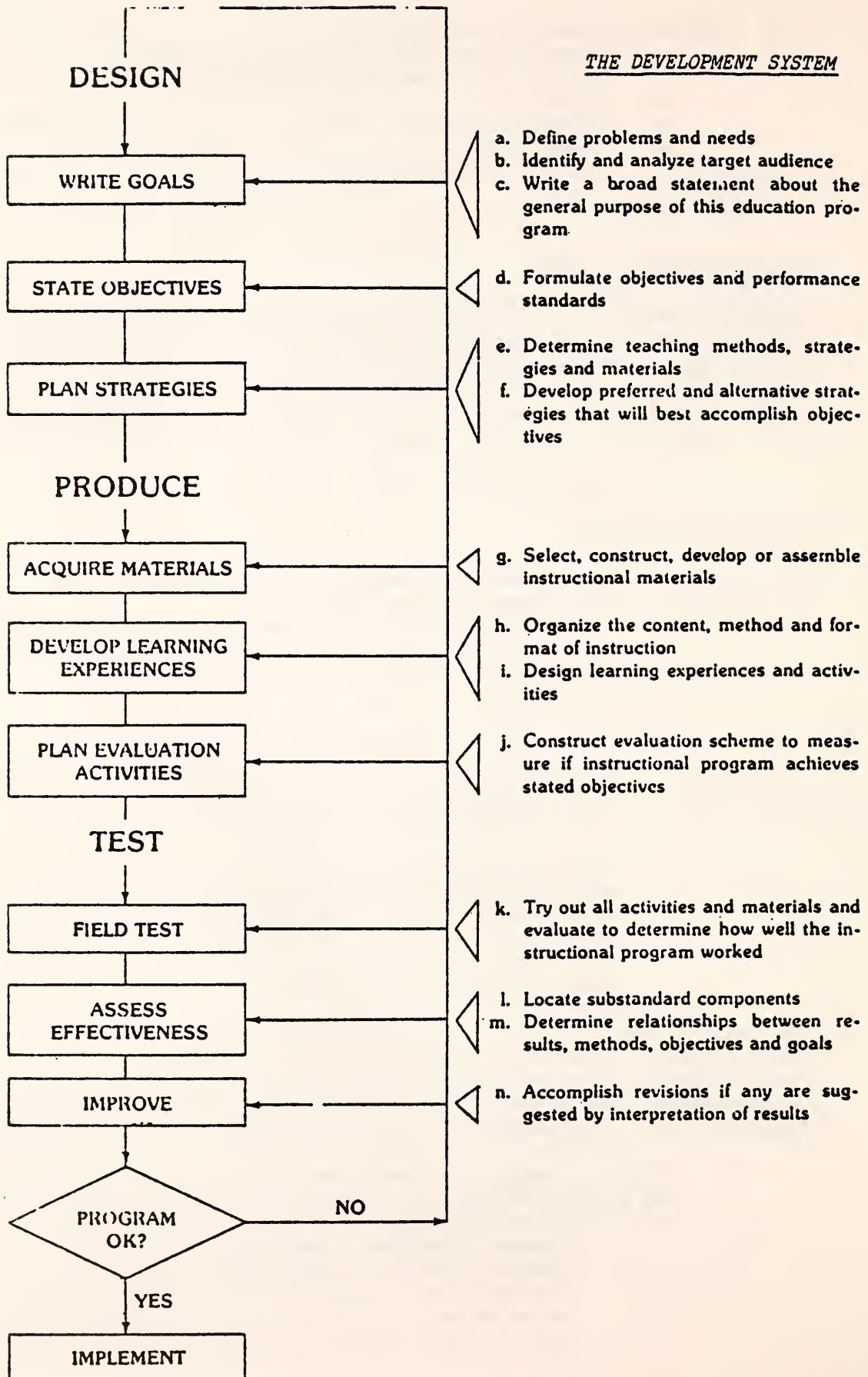
The emphasis of the Delivery System addresses three discreet needs which will require a comprehensive program of services:

- 1. There is a need for the general public to be aware of and understand ecosystem/estuarine problems and issues in order to participate as citizens in making decisions which affect their daily lives*
- 2. There is a need for educators to be aware of the learning resource at Padilla Bay in order to design program materials and select resources for use in teaching about estuaries on site and in classrooms*
- 3. There is a need for facilitating changes in post secondary education, public and private schools, school systems, and the education programs of agencies that lead to the adoption or design of effective ecosystem/estuarine programs and curriculum that achieve #1 and #2 above*

The Delivery System is based on relationships between 1) the various delivery levels being served (external agencies, community, and institutions), 2) the stages of institutionalization (mobilization implementation, and institutionalization) and 3) delivery concerns (goals, program requirements, barriers, strategies, and resources).

- 1. Delivery Levels -- indicate the entire system of influences and control in which this estuarine education program exist. This subsystem is divided into three major categories:*
 - A. External Agencies: The federal government, Superintendent of Public Instruction, state resources management agencies, universities, or colleges. In this role, these agencies may not be a part of the implementing institution,*

THE DEVELOPMENT SYSTEM



but provide various types of support including conceptual guidance, technical assistance, moral support, assessment or evaluation, and funding.

- B. *Community: This is the source of many educational needs and demands and often the source of political, financial and moral support to new programs.*
 - C. *Institution: Includes intermediate agencies (the college, ESD or school district) the school site, the classroom, the Padilla Bay Estuarine Sanctuary, and the learner experience. It is this level which largely determines goals, policies, program requirements and financial arrangements that guide delivery in terms of instruction and program management.*
2. *Stages of Institutionalization -- Indicate that an infusion of an ecosystem/estuarine program into a school's, college's or agency's curricula occurs in three phases:*
- A. *Mobilization, which determines what the program is and how it will be fit into the existing curriculum.*
 - B. *Implementation, which determines how the program will be carried out.*
 - C. *Institutionalization, which determines how the program will be maintained or continued.*

An effective delivery system must address itself to each of these stages or phases in order to control for , and achieve the, desired program outcomes and to ensure their continuation.

3. *Delivery concerns -- indicate the major issues which an effective delivery system must examine and specify for each of the delivery levels (A), and (B) stages of institutionalization. These major delivery concerns include:*
- A. *The specification of goals and objectives for learning or operations*
 - B. *The specification of program requirements necessary to achieve those objectives*
 - C. *An identification of the barriers, obstacles, constraints or resistances that may prevent or inhibit the satisfaction of the objectives*
 - D. *The specification of reality - oriented delivery strategies that will be used to overcome (modify, eliminate) the barriers*
 - E. *The identification of outside support/assistance needed to enable or facilitate the achievement of the program objectives*

It is important to note here that as the plan develops, we are actually creating the inherent evaluation system necessary to assess a successful delivery system design. This evaluation is an ongoing set of activities which go beyond planning and which interrelate with all the plan components. This type of evaluation-building becomes especially evident as we create a framework for planning and design by addressing the following areas of planning.

4. Areas of Planning for Curriculum Delivery -- indicate the planning levels and delivery concerns (within each level) that must be considered for curriculum delivery design and planning.
 - A. Administration: This planning level involves key change agents or "gatekeepers," such as district superintendents, resource agency managers, school principals, deans, department heads, project coordinators, and administrative project or program teams. This level influences or has control over resource allocation, school and program policies, educational objectives, obtaining required approvals, allocating support funds, and ensuring numbers and types of personnel available to a project or program.
 - B. Curriculum: This planning level is concerned with what is to be taught, and what materials and other resources are needed, to ensure a holistic, integrated basis for instruction (refer to S-1 -- What is to be learned). Of major importance here are certain key aspects of curricula that address:
 - Issues of priority, in
 - Settings of educational effectiveness, with
 - Topic and process oriented content.
 - C. Instruction: It is at the teacher, interpretive, or instructional level that new content or processes gets transmitted to students. The Substantive Dimension of this plan (S-1, S-2) presents the kinds of concerns that can be addressed by teachers. These instructional concerns include the following:
 - How curriculum content is organized and sequenced;
 - How materials and resources are gathered;
 - Teaching methodologies; and
 - Activities or arrangements to maintain the integrity of the curriculum content.
 - D. Evaluation: Refer to G-7 (page 4) for explanatory narrative.

APPENDIX IV

Estuarine Sanctuary Recreational Program



STATE OF
WASHINGTON
Dixy Lee Ray
Governor

DEPARTMENT OF ECOLOGY
Mail Stop PV-11
Olympia, Washington 98504
206/753-2800

October 8, 1979

M E M O R A N D U M

TO: Mr. Wilbur G. Hallauer, Director
Department of Ecology

FROM: Ralph Larson, Chairman-P.B.E.S. Steering Committee
-Director of Department of Game
John Stone, Co-Chairman-P.B.E.S. Recreation Sub-
Committee-President, Washington State Sportsman
Council
Bill Bush, Co-Chairman-P.B.E.S. Recreation Sub-Committee
-Chief, Research and Long Range Planning, State Parks
Commission

SUBJECT: The Proposed P.B.E.S. Final-Approved Recreation Program
Report-October 4, 1979

Enclosed is the final report for the proposed Padilla Bay Estuarine Sanctuary Recreation program. The report was approved and adopted by the P.B.E.S. Technical Committee on September 14, 1979, and approved by the Steering Committee on October 4, 1979.

RL:JS:BB:s
enclosure

INTRODUCTION

Historically, Padilla Bay's geography and physiographic setting have defined its recreational use both in terms of kinds of recreational use and use intensity. Access constrained both by substantial steep bank shorelines and extensive exposed tidal flats at low tide periods is the major limiting recreation use factor and is primarily responsible for the bay's present intactness. The bay's location at the gateway to the San Juan Islands has also contributed to its preservation due to focusing recreationists away from the area.

INVENTORY - EXISTING AND POTENTIAL SITES

Skagit County Planning Department's 1979 access and visual assessment describes existing and potential recreation sites.

There are limited opportunities for public use of Padilla Bay shorelines, with the exception of March Point and Bayview State Park. Saddlebag Island is inaccessible to the majority of people. Expanded public use of the shoreline, especially on the mainland, would be a desirable component of estuary development plans.⁽¹⁾

SHORELINE DESCRIPTION

There is a great deal of variety in Padilla Bay shorelines. This variety is an important element in the overall visual quality of the bay shorelines, in terms of both high and low visual amenities.

The shorelines of Padilla Bay all show the influences of human use. The cedar post seawall along the mainland north and south of Joe Leary Slough and the refineries at March Point are proof of long-standing and on-going human activity around the bay. The refineries especially are visible from throughout the bay, and together with the east-bound span over the Swinomish Channel they represent the most intrusive cultural elements on the bay.

Samish Island and Bayview Ridge are glacial till uplands, rising directly up from the tidelands. At some points the bluffs on Samish Island rise to 100 feet or more, while Bayview Ridge rises between 20 and 40 feet up from the beach to Bayview-Edison Road. About one mile north of Bayview State Park, the bluffs give way to a permanent beach berm and a large, marshy backshore as Bayview Ridge angles away from the shoreline and ends in the Samish River floodplain. From this point to Samish Island, the mainland is flat, nearly at sea level, and is protected from tidal inundation by a dike and cedar post seawall. Landward views extend to Chuckanut Mountain and other coastal foothills and beyond to the Cascades.

The south shore, from Indian Slough to the west side of Swinomish Channel is heavily modified by human activity. The sloughs and shoreline are diked, there are a number of artificially formed sand islands, and both Highway 20 and the Anacortes rail spur lie close to the high tide line. Continuing east along the shoreline, the mudflats and inter-tidal area in front of the sloughs gives way to a rocky beach and a high wooded bank along the east side of March Point. The refineries are not apparent until reaching the north end of the beach, where the bank is low and unvegetated.

VIEWPOINTS

It is a common practice in visual assessment studies to establish a framework in the environment from which the landscape is viewed. Typically a baseline is identified and the landscape is divided into foreground, midground and background, with each of these areas containing elements of the environment which are assessed for their contribution to scenic quality. For example, a baseline could be a highway that bisects a study area, with foreground, midground and background determined in relation to the highway.

However, this framework does not apply well to viewpoint analysis. The viewpoint itself becomes the baseline, and foreground, midground and background assume different values, depending on location. Looking seaward from the viewpoints located around Padilla Bay, no land lies nearer than 1 1/2 miles to the viewer (March Point to Hat Island). Thus the foreground either becomes the viewpoint itself, or is extended past a point of high visual clarity. Therefore, rather than using a baseline, foreground, midground, background framework, each viewpoint will be assessed according to the degree of vision it allows; the kind of land and water forms present; the diversity of landscape elements; and the degree of unity or intactness among the different landscape elements. Six viewpoints are described below:

North end of March Point

March Point is a popular and traditional recreation site, and is heavily used in summer months by vacationers who park their trailers and campers along the road right-of-way.

The dominant view is to the north, with Hat Island, 1 1/2 miles away, controlling the "viewshed" and acting as a reference point for the more distant views of the mainland, Samish Island and beyond. The north view is across the deep water portions of the bay and gives the illusion of deep water to the mainland shoreline. Much of the "naturalness" of the view is prescribed by oil tanker piers and the city of Anacortes to the west, and by intensive, industrial use of the March Point uplands.

Lummi Island, rising abruptly over the western edge of Samish Island, and the Chuckanut Mountains are visible, forming a backdrop that is highlighted by Mount Baker, due east. On clear days, the view of Baker acts as a scenic "anchor" like Hat Island, by directing and holding the viewer's attention. Views of the mainland shoreline from Indian Slough to Samish Island are indistinct, and provide no contrast except for a generalized distinction between the Bayview uplands and the Samish River floodplain.

With respect to Mount Baker, the mainland shoreline functions as a "layer" of topography adding to the "frame" that underlies the mountain. On clear days, the snow-capped Canadian Cascades are visible 60-70 miles to the north.

At the North Entrance to Swinomish Channel

Of the six viewpoints selected for analysis, this is the least desirable from the standpoint of visual diversity and clarity. The view is contained by March Point and the mainland for some three miles, and although the view extends eight miles to Samish Island, the net effect is not expansive. Instead the viewer's attention is drawn to the Swinomish Channel entrance at the railroad bridge, and to the surrounding land lying above the tide line. Thus the viewer's area of identification is much smaller than the space enclosed by the bay. The potential for viewing boat traffic on the Channel is offset by the close proximity of Highway 20 and a rail line.

Bayview State Park

The view from Bayview State Park is about 180°, looking north and south along the shoreline. Most striking at this location are the oil refineries 3 1/2 miles across the bay on March Point. They are a detraction from the otherwise rural character of the shoreline, and are not well fitted to the landscape. Like the viewpoint at Swinomish Channel, there is a sense of enclosure here also. Despite the long reach of the view to Guemes and Cypress Islands and beyond, being at the south end of the bay tends to hold the viewer's attention in that area. The sloughs and Channel to the southwest are not apparent, nor are landscape details on the visible islands (Guemes, Samish, Vendovi, Lummi) to the northwest.

Spit, South Side of Joe Leary Slough

This is easily the most desirable of the six viewpoints. The site is an accretion shoreform and is the furthest extension of the mainland into the bay. It is also midway up the shoreline so that the views are not trapped or directed by March Point, but extend easily to the west and northwest. The viewing angle is around 270° , with Whidbey and Camano Islands visible to the south, and Mount Baker visible to the northeast. The Mount Baker view is an especially good one; the Mountain is in full sight through a draw in the coastal foothills.

Seaward, the view has two major outlets: one to Guemes Channel and the other to the Straits of Georgia, looking between Samish and Guemes Islands. From this vantage, the islands appear to be layered towards the horizon, the nearer ones green and well defined, the farther ones grey and indistinct, together creating a strong sense of depth and relief.

Like all the viewpoints, this one too has evidence of human use, in this case a cedar post seawall built early in the century to protect the coastal levees from erosion. The levee and seawall do not intrude on the viewer, or detract from the high quality of the viewshed. Even the refineries' visual impact is subdued by the landscape variety and content offered at this viewpoint.

Ben Anderson Property, off Samish Island Road

The view from this location is much like that from the spit (see above), only more expansive. Bayview Ridge is 2 - 2 1/2 miles to the south, making this viewpoint the only one of the six with views to all directions. Unlike the Bayview and Swinomish Channel locations, there is no sense of enclosure at this site, but rather a feeling of being at the center of a landscape pattern composed of mountains, farmland, islands and the ocean. The visual amenities are more pleasing at this site than at the spit, however, the potential for public use is not as great.

West End of Samish Island

The view from this location is classic in the sense that the viewer is above (up to 100 feet) the adjacent scenery looking down at it. The view reaches over eight miles to the Swinomish Channel, giving a strong impression of the bay's size. Guemes, Huckleberry, Saddlebag and Dot Islands are the most visible landscape elements, and have a tendency to pull the viewer's attention away from the less discernable, southern part of the bay. However, the viewpoint has the best overall vantage of the six sites discussed.

The following section describes existing public access and recommends the inclusion of selected shoreline sites in the estuary boundaries.

PUBLIC ACCESS

The Skagit County Shoreline Access Study, March 1978, indentifies nine existing and potential access points on Padilla Bay. Of these, four are currently in active use: the north end of March Point, Bayview State Park, the Bayview boat launch and Saddlebag Island. The remaining five locations are either redundant (there are three other accesses on March Point) or undeveloped, as is the case with the Indian Slough dike. Since publication of the access study, the Inez Breazeale property (64.36 acres, 1,100 feet of shoreline) has been dedicated as a wildlife sanctuary and is now open to public access. The property is 900 feet north of Bayview State Park, and together with the park is the only publicly owned shoreline on the mainland side of the bay.

An inventory of existing access sites shows an absense of public use facilities on 10,078 feet of shoreline at March Point that has been reserved for public use. The only user facility is a boat launch, maintained jointly by Shell Oil and the State Game Department. The shoreline is privately owned at the tip of the point, but is made available for public use again by Shell Oil. This is a popular week-end vacation spot for in and out of county residents who take advantage of the wide road shoulder to park recreational vehicles.

Ease of access is probably a major reason for the site's popularity, together with marine activities and atmosphere, and splendid mountain views on clear days.

The Washington State Parks and Recreation Commission owns Saddlebag Island and has developed it for public use with picnic tables, fire pits and trash barrels. The island is about 23.2 acres in size (including Dot Island) and is 3 miles from the boat launch at the north end of March Point. It is an ideal fairweather moorage and recreation site, though somewhat limited in use because boat access is required. As an existing public use area, the island should be included in the estuary.

Bayview State Park is a 23.88 acre parcel purchased for public use in six parcels between 1924 and 1968. The site has camping spots available upland from Bayview Edison Road, and a large area (with tables and firepits) just above the high tide line. The park is a popular day-use area and the shallow waters of the Bay make it ideal for youngsters and others who enjoy water activities. Parking is abundant. The park is also a logical starting point for beach walks to the north, though the shoreline is currently posted no trespassing.

The Department of Game maintains a boat launch in Bayview near "B" Street. There is parking for a half dozen or more vehicles and a concrete launching ramp.

From this inventory, it is evident that there is a shortage of public access locations on the Bay, particularly in light of its intended designation as a national estuary. Therefore, a recommendation will be made to acquire additional access property on the mainland and to include some uplands in the project.

An excellent site for acquisition is the viewpoint just south of Joe Leary Slough. The viewpoint is part of a 34 1/2 acre parcel that abuts the Bayview Edison Road, more precisely described as:

A tract of land in Lot 1, Section 19, and Lot 4, Section 18, Township 35 North, Range 3 East of W.M., beginning on the south line of said Lot 1, west 1131 feet from its southeast corner; thence following along the west side of the county road as now traveled north 1° 23 feet east 183 feet; thence North 26° 40 feet east 340 feet; thence leaving said road north 37° 39 feet west, to meander line of said Lot 4, Section 18; thence southerly following the Government meander line to the south line of said Lot 1; thence east to the place of beginning, said tract containing 34-39 acres or less. (See attached map)

There is a small frame cabin on the property that is evidently used during duck hunting season, but is not a year around residence. The property is in Agricultural Open Space, and the level portions of it are diked and cultivated. As with much of the mainland coast, the dikes are protected by a wooden seawall.

The viewing quality of the site is sufficient reason to include it within the estuary, but there are other, equally good reasons. It is the only accretion shoreform (specifically a cusped foreland) on the mainland and is near Joe Leary Slough, which itself should be considered for partial inclusion. Field observation on 7/18/79 showed 20-25 Blue Herons on the site, some four miles from their Samish Island rookery. Eagles can also be seen, as well as abundant waterfowl in season. The site is adjacent to a county road and is less than five miles from SR 20. Because Bayview State Park fulfills the requirement for an active, day-use area, this site could be minimally developed for viewing, nature study, beachcombing, etc.

There are other locations as well that could be considered for either physical or visual access to the bay and its shorelines.

A good location for visual access would be on Samish Island, from a turn-out on Samish Island Road, either near the end of the road, as indicated in the viewpoint analysis map, or at a more central location on the island. Several spots along the road have been cleared for viewing, however, this has been done to enhance views for homeowners, not for the public.

Initial estuary boundaries include Indian Slough from its mouth to Bayview Edison Road. If this becomes a final boundary, then some thought might be given to a trail on top of the slough dike, allowing walking access to the bay. While the views and recreational use potential are not as great at this location than at others (Bayview State Park, the Spit, Samish Island), it could offer an excellent nature walk in the transitional zone between the mainland and the tide flats.⁽¹⁾

An additional site outside of, but within the estuary influence zone, is the potential fishing access and viewpoint site at the location of the west bound approach to the Highway 20 bridge draw-span over the Swinomish Channel.

COMPATIBLE RECREATION ACTIVITIES

Given the natural constraints on the number of recreation activity occasions which can take place within the estuary boundaries, the scope of permissible activities is judged to be reasonably broad. Some of the activities listed may not be feasible within the estuary if no uplands are included but can take place at the boundary on publicly owned lands.

PERMISSIBLE ACTIVITIES

Swimming	Food Gathering	Bicycling
Visiting Beach	Walking/Hiking	Hunting
Boating	Camping (Boat)	Jogging
Fishing	Picnicking	Interpretive Center
Nature Study	Driving for Pleasure	Photography

Recreation Activity preference surveys undertaken by Skagit County strongly identify opportunities which can be satisfied by the bay. Skagit County residents want coordinated programs optimizing resources at least direct cost, with acquisition/conservation for the future and the development of outdoor facilities wanted by more than 1/2 the people. High demand activities include beach activities, (number 1 preference for outdoor activities) fishing, camping and all forms of hiking and walking taking the first four places. Preservation of saltwater beaches in their natural state attracted 68 votes as a high priority program, 13 more than its nearest competitor - mountain stream areas. Swimming and camping facilities were the two most sought after additional needs. (2)

INTERPRETIVE FACILITIES

Because of the bay's size and access limitations, special consideration should be given to the development of interpretive facilities at a central bay location with good viewpoints to other bay features. The Breazeale property is the recommended location. It is recommended that the nearby Bayview State Park and county owned tidelands all be incorporated with connecting links and perhaps by acquisition of intervening lands to form a comprehensive interpretive center base. To the extent feasible, laboratory facilities needed for onsite research should also be incorporated here to optimize public impact and minimize cost and impact on the bay.

RECREATIONAL IMPACTS ON ADJACENT LAND OWNERS

Recreational impacts can to some extent be related to proximity, volume, degree of change, consumption/non-consumption. Impacts, while perhaps measurable, are to a substantial degree perceptual and dependent on previous experience. Numerically, impacts from the proposed recreational program are judged to be minimal. As already noted elsewhere in this section, only one additional general day-use site is proposed with the remaining proposals for shoreline access and viewpoints. The scale of each recommended development is constrained by natural conditions; will result in non-consumptive uses; will not be in close proximity to densely settled areas; and bring little change to existing use. Given the fact that resident owners may prefer no impact to the consequent recreational impacts, the recreational impacts are considered to be of less potential impact than almost any alternate estuary use would bring. Recreational impacts are perceived to be largely a sharing of approximately 13,500 acres

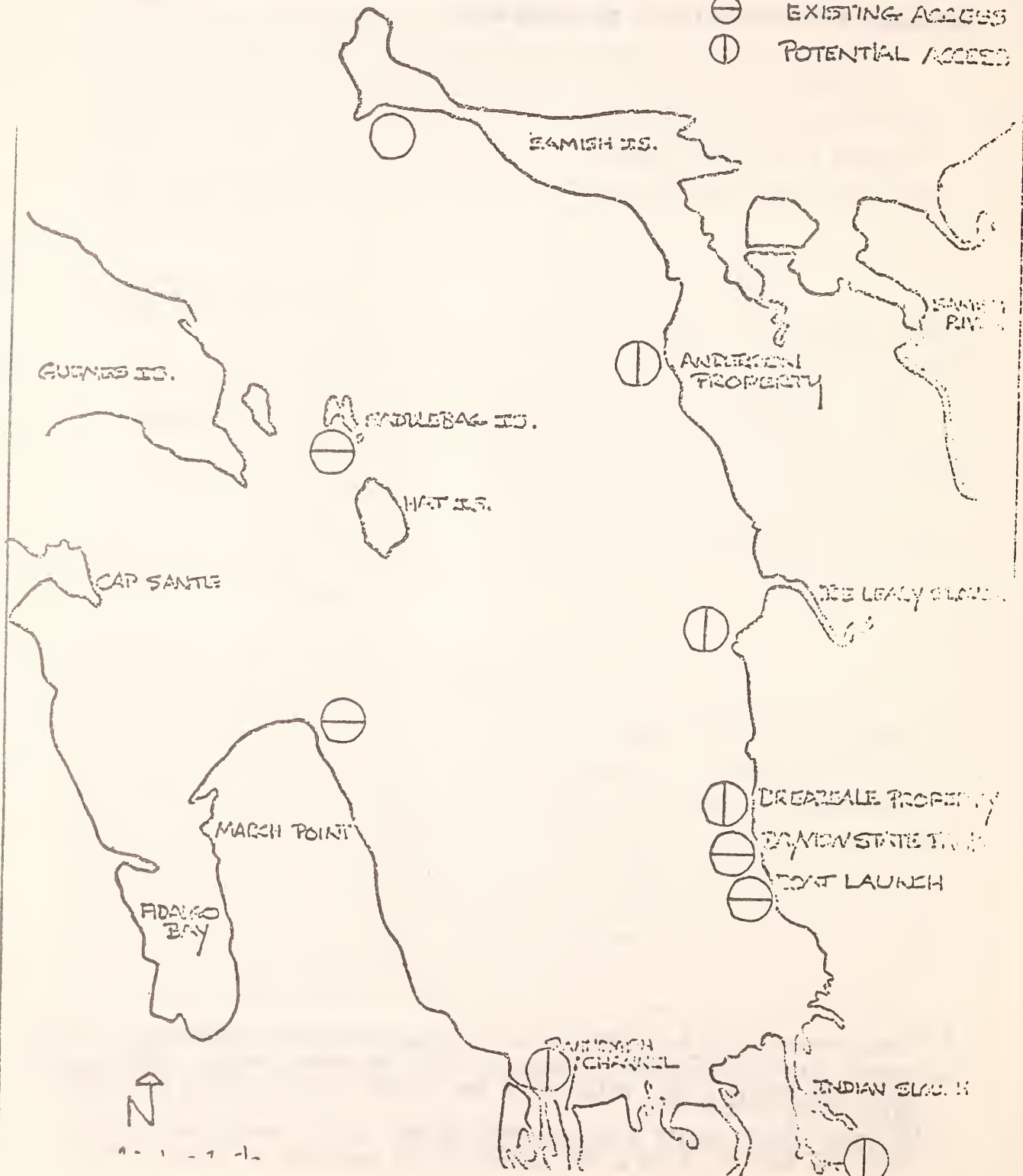
with an additional 200,000 to 300,000 activity occasions of use, some 50% of which would be expected to occur during the 100 days of summer. No new recreational activities not already participated in are expected to be generated by the creation of the sanctuary.

- (1) Taken from PADILLA BAY ESTUARY, Public Access and Visual Assessment, Skagit County Planning Department, August 8, 1979. Secondary source: SKAGIT COUNTY SHORELINE ACCESS STUDY, Prepared by the Skagit County Planning Department, March, 1978.
- (2) DECIDING SKAGIT COUNTY'S RECREATIONAL FUTURE, Skagit County Cooperative Extension Service, From a 1976 Survey of the Residents of Skagit County.

PADILIA TAU VIEWPOINTS AND PUBLIC ACCESS

LEGEND

- VIEWPOINT
- ⊖ EXISTING ACCESS
- ⊕ POTENTIAL ACCESS



INTRODUCTION

One might ask whether this is "just another survey," or if there is something different. Indeed, we think there is something quite different and significant about this effort to assess what residents of Skagit County would like for the future.

This survey represents an effort to build on the involvement process initiated by the Skagit County Recreational Development Association which sought to identify desirable directions for the County's recreational future. We have attempted to build a questionnaire that accurately reflects the ideas obtained by the Association, and to do so in language that will communicate to most of the general public, thus extending participation in the involvement process. The result is a questionnaire quite unique to the concerns of Skagit County. The hoped for result is some indication of where the general public stands on the many issues that seem vital to determining future directions for Skagit County recreational environment.

This report represents a raw summary of findings, and is prepared as a complement to an oral discussion of the major findings. We hope it will stimulate further discussion and debate which will be helpful to all citizens and people of the county as they work towards making Skagit County the kind of place they want it to be.

PRELIMINARY SUMMARY OF RESULTS
FROM A 1976 SURVEY OF THE
RESIDENTS OF SKAGIT COUNTY *

Deciding Skagit County's Recreational Future



What Would You Prefer?

This survey is a 1976 effort to determine recreational desires of Skagit County residents.

This survey is co-sponsored by the Skagit County Recreational Development Association, Skagit County-W.S.U. Cooperative Extension Service, Skagit County Planning Department, Skagit County Park Board, and the Skagit County Board of Commissioners.

Thank you for your help.

Skagit County Cooperative Extension Service
306 Courthouse, Mount Vernon, WA. 98273

* This summary was prepared by Bill Gray, Community Development Consultant, Cooperative Extension Service, Washington State University and Kerry Barn Extension Assistant, Skagit County Cooperative Extension Service.

Original Sample Size.....	1188	Questionnaires Completed...	766
Inaccessible Households....	74	Response Rate	
Deceased, moved out of		(% of adjusted sample	
county, blind. disabled	_____	size).....	68%
Adjusted Sample Size.....	1114		

A sample size of this magnitude should provide reasonably reliable and valid estimates of the opinions of all residents of the county. Assuming that those who did not return the questionnaire hold similar attitudes to those that did, answers provided should vary no more than four percentage points from those of the population sampled.

FINDINGS

Results from the survey are reported on the remaining pages. To aid the reader in interpreting the results, they are reported in a particular way. Specifically, questions are reported in verbatum form in the order they were asked. Only percentages are reported. The percentages are in all cases based upon the total number of people who answered the question. That number is a maximum of 766, and varies slightly below that for most questions in as much as some respondents did not answer every question.

Q-3 The following is a list of Outdoor Activities in which families and individuals frequently participate. It would be helpful for us to know in which of the following activities your household would participate if facilities were available. Please indicate three of the following activities which would be most important to your household.

PERCENT

<u>2</u>	1. Basketball
<u>15</u>	2. Beach activities (crab, clam or oyster gathering, beach combing or scuba diving)
<u>5</u>	3. Bicycling
<u>6</u>	4. Boating (power boating, sailing, canoeing, or kayaking)
<u>11</u>	5. Camping (overnight)
<u>3</u>	6. Field sports, (baseball, badminton, soccer, football, croquet, or track and field.
<u>14</u>	7. Fishing (fresh water or saltwater)
<u>3</u>	8. Golfing
<u>10</u>	9. Hiking (backpacking, nature hikes, or walking for pleasure)
<u>3</u>	10. Horseback riding
<u>1</u>	11. Horseshoes
<u>3</u>	12. Motor activities or sports (auto racing, auto rallies, motorbiking, or four wheel drive)
<u>5</u>	13. Outdoor swimming
<u>8</u>	14. Picnicking or day camping
<u>4</u>	15. Shooting (rifle or archery, target or trap)
<u>3</u>	16. Snow related activities (skiing, sledding, and snow motiling)
<u>3</u>	17. Tennis

Q-4 There has been much discussion about preserving certain areas in their natural state. If Skagit County residents desire areas be developed only enough to accomodate recreational use, which areas should receive, a HIGH priority, a MEDIUM priority, a LOW Priority or NONE at all?

<u>Number</u>	<u>Possible Areas</u>	<u>What priority, if any, should each area have?</u>			
		<u>High</u>	<u>Medium</u>	<u>Low</u>	<u>None</u>
1	Saltwater beaches	68	23	6	3
2	Mountain stream areas	55	28	11	5
3	Panoramic view areas	29	41	23	7
4	Freshwater shore areas	46	38	12	4
5	Open space near communities	28	32	28	12

Q-7 Would you please list the two specific activities that your household would most like to see developed either with additional facilities or appropriate programs.

	First Choice	Second Choice		First Choice	Second Choice
Archery	0	.2	Motor Biking	.5	.9
Autocrossing	.5	.5	Mountain Climbing	.2	.2
Back Packing	.2	0	Nature Walks	.3	.7
Badminton	.2	0	Photography	0	0
Baseball	.3	.2	Picnicking	1.0	1.6
Basketball	1.8	1.2	Ping Pong	0	.5
Beachcombing	2.3	1.8	Pool or Billiards	.6	1.8
Bicycling	2.7	4.7	Power Boating	1.5	.3
Bird watching	0	.2	Racketball	1.0	.5
Bowling	1.3	1	Reading for Pleasure	0	0
Camping	10.4	8	Rowing	0	0
Canoeing & Kayaking	.2	0	Sailing	.2	.2
Cards	0	.2	Saltwater fishing	.3	1.4
Chess, Board Games	0	.2	Scuba diving	0	0
Crab, Clam Gathering	.3	.4	Sledding	0	0
Croquet	0	0	Snow mobiling	.2	0
Dancing	1.9	3	Snow Shoeing	0	0
Day Camping	1	1	Snow Skiing	.2	.4
Flying & Skydiving	0	0	Soccer	.2	.4
Fraternal Club Act.	.2	0	Socializing in Comm.	0	.2
Freshwater Fishing	3.9	4.6	Socializing at Home	0	.2
Frisbees	0	0	Swimming	24.5	10.7
Gardening	0	0	TV or Radio	0	0
Golfing	1.1	1.9	Target Shooting	1.8	3.3
Handball	.3	.7	Tennis	3.4	5.3
Hiking	3.4	3.8	Theater going	0	0
Hockey	.2	0	Touch Football	.2	0
Home Hobbies, etc.	7.3	6.8	Track and Field	0	0
Horseback Riding	1	1.8	Trap Shooting	.5	.7
Horseshoes	.5	.5	Museums, etc.	.2	0
Ice Skating	1.5	4	Volleyball	.3	1.2
Jogging	0	0	Walking for Pleasure	.2	.4
			Water Skiing	.2	1.8
			Yoga, Personal Exercise	1	1.8

Q-8 For your first choice activity from question 7, if a recreational bond issue were required, about how much would your household be willing to pay for its achievement?

Percent	
<u>17</u>	1. Would not support the activity.
<u>35</u>	2. \$.25 per each \$1,000 of assessed value.
<u>26</u>	3. \$.50 per each \$1,000 of assessed value.
<u>18</u>	4. \$1.00 per each \$1,000 of assessed value.
<u>4</u>	5. \$2.00 per each \$1,000 of assessed value.

1979 SUPPLEMENTAL SURVEY

Introduction

As a supplemental to the 1976 survey an additional questionnaire was distributed to a proportionate amount of residents of Skagit County. The 1979 survey utilized the boundaries of County School districts as the defined target areas for the dissemination of the questionnaires. Three percent of the population of each target area would be randomly selected and surveyed. The questionnaires were distributed by a CETA Recreation Staff over a four week period. Because of their concern of the results and personal drive, the returns of this survey reached approximately 76% level. From all information that has been reviewed a return such as this is extremely good and unusual as the average return rate according to ORB is approximately 50%. The response rate is calculated as follows per each School District.

<u>Surveying District</u>	<u>Total Distributed</u>	<u>Total Returned</u>	<u>% of Returns</u>
Anacortes	338	270	80
Burlington	295	162	55
Concrete	75	40	53
Conway	69	56	81
LaConner	80	56	70
Mt. Vernon	445	360	81
Sedro Woolley	<u>430</u>	<u>368</u>	<u>86</u>
Totals	1732	1312	75.75%

1. Please indicate the number of persons and their sex in your household in each age group.

Male

Under 7

____ 7-12
____ 13-18
____ 19-26
____ 27-35
____ 36-49
____ 50-59
____ 60 +

Female

Under 7

____ 7-12
____ 13-18
____ 19-26
____ 27-35
____ 36-49
____ 50-59
____ 60 +

Anacortes	Durlington - Edison	Concrete	Conway	LaConner	Ht. Vernon	Sedro Woolley	Total
35	37	9	8	12	68	76	247
19	21	8	7	11	44	46	156
23	20	4	8	2	59	60	176
55	45	7	17	6	92	113	235
34	36	12	10	17	87	71	264
37	35	5	19	9	71	87	263
39	19	4	13	5	59	54	193
44	22	11	7	12	22	75	193
44	28	9	9	13	65	64	232
31	25	4	7	9	54	53	182
49	45	8	6	10	67	94	279
63	46	12	13	11	107	80	332
64	42	12	9	19	87	54	287
67	47	9	24	8	93	103	351
35	18	7	5	8	46	79	198
58	29	15	7	8	40	93	250

The average size of the household for those individuals surveyed amounted to 3 individuals per home. The majority of the population, indicated by the survey returns, is in the age brackets ranging from 19 years of age to 49 years of age with the female gender comprising 53% of the total of this age group. As indicated in this survey and confirmed through personal discussion with various school District Administrative personnel those individuals in the 0-7 age bracket are represented as the fourth largest population group in Skagit County.

Total Population Review of Those Individuals Listed in the County Survey

Age	Total	Percent
Under 7	479	12.16
7-12	338	8.58
13-18	455	11.56
19-26	667	16.94
27-35	551	13.99
36-49	614	15.59
50-59	391	9.93
60 +	443	11.25
	<u>3938</u>	

What time or times of day, during the week, would you most often have free for participation in activities that you would consider recreational?

	Anacortes	Burlington - Ellison	Concrete	Conway	LaConner	Ht. Vernon	Sedro Woolley	Total
6-9 AM	19	10	4	2	3	16	24	149
9 AM-12 noon	25	12	7	4	6	40	55	222
12 Noon-3 PM	44	13	11	6	11	56	81	244
3 PM-6 PM	55	27	17	3	16	69	61	671
6-9 PM	76	93	19	40	21	202	220	134
after 9 PM	34	16	5	2	4	30	43	
Weekends								
6 AM-12 Noon	48	26	11	6	7	64	78	240
12 Noon-6 PM	96	80	72	28	20	189	233	678
After 6 PM	47	42	10	10	11	87	115	292

Indicates the majority of participation and user hours during the week days. Would be from 6:00 P.M. to 9:00 P.M.. Weekend park users hours would be from 12:00 Noon to 6:00 P.M.

How long have you lived in Skagit County?

less than 1 year.	17	9	2	5	2	19	28	82
1-3 years	29	11	8	5	15	53	31	152
4-7 years	35	17	12	11	8	50	40	169
8-15 years	12	21	8	9	5	60	56	191
over 15 years	111	150	27	12	20	182	196	718

In order to establish credibility and response awareness the question of longevity in the County was asked. The intention of this question established the fact that the majority of the population surveyed were living in the County at the conception of the Park and Recreation Commission. Perhaps the greatest impact this question has, in relation to questions five and eight, points out the lack of Department program and facility awareness by the county residents. Thus an indication of better use of the local media and the necessity to develop brochures manuals and public presentation to increase the knowledge and awareness of the public of the department.

	Anacortes	Burlington - Edison	Concrete	Conway	LaConner	Mt. Vernon	Sedro Woolley	Total
4. Do you feel parks and recreation should be provided by Skagit County?								
Yes	156	123	34	48	49	304	261	975
No	15	6	0	0	2	13	22	58
No response	54	43	9	10	7	59	97	279

An overwhelming majority 74% were in favor of the County providing services for its residents. A mere 4% were not in favor of such a proposal and the remaining 22% indicated no response to the question.

5. Please check those Skagit County Parks you have visited, or are aware of.

Ann Wolford Park	17	6	0	0	1	14	28	66
Conway Park/Boat Launch	27	44	6	37	14	115	68	311
Cleveland Center Playground	13	28	4	5	9	111	45	415
Donovan Park	54	82	5	3	11	108	176	439
Eagleview Park	19	12	5	1	4	21	13	75
Friday Creek Park	53	93	10	9	18	133	197	515
Guemes Island Playground	76	19	2	3	9	37	21	167
Sharpe Park	34	11	0	1	3	28	23	100
Skagit Playfields	48	51	6	11	20	139	109	384
(The above are day use facilities)								
Sank River Park	46	49	34	11	11	101	102	314
Steelhead Park	46	50	41	7	9	77	134	364
Young Park	9	10	0	1	3	33	16	72
(The above are camping facilities)								
Cleveland Center Mt. Vernon	23	55	6	19	13	184	119	421
Anacortes Senior Center	96	21	1	2	4	30	18	172
Burlington Senior Center	4	40	2	2	3	25	31	107
Sedro Woolley Senior Center	3	19	11	4	3	33	177	221
Concrete Senior Center	4	9	31	0	2	17	15	78
(The above are Senior Centers)								

The awareness response of those surveyed was very poor. Of 17 park and center facilities each of the 1312 individuals surveyed were aware of or have visited an average of 2.8 parks. In many cases these facilities or centers that received greater use were within a 5 - 8 mile radius of the populated areas of Skagit County. Because of this type of use one would surmise the public is 1.) not aware of the other County facilities and/or 2.) are concerned about the energy problem and choose to visit parks that are not going to require an extensive driving period to reach.

	Anacortes	Burlington - Edison	Concrete	Conway	LaConner	Mt. Vernon	Sedro Woolley	Total
6. A. Do you feel the park and recreational facilities in It Com.								
Outdoor Facilities								
— Adequate	89	88	24	22	17	153	122	515
— Inadequate	29	30	12	8	18	85	95	277
— No Opinion	94	60	14	27	18	133	174	520
Indoor Facilities								
— Adequate	57	31	15	21	12	104	101	341
— Inadequate	45	51	8	8	19	107	106	344
— No Opinion	110	90	15	25	19	145	219	627
8. If you marked inadequate above, please comment								

A. Approximately 39% of the survey responses indicated the amount and type of outdoor facilities provided by the County are adequate. However, 21% indicated the need for improvement and 40% did not respond pointing out the lack of awareness of County facilities or the inability to rate the parks.

B. 26% of the returns rated the indoor recreation facilities in Skagit County as adequate. The remaining 74% (26% responded inadequate, 48% responded no opinion) indicated the facilities in Skagit County are not adequate or the individual surveyed could not make a judgement of the adequacy due to a lack of awareness.

	Anacortes	Burlington - Wilson	Cenacore	Conway	LaConner	McC. Vernon	Sedro Woolley	Total
Do you think more park and recreation facilities are needed in the County?								
--- Yes	124	125	211	26	15	271	285	901
--- No	24	14	6	2	10	27	27	101
--- No response	69	27	11	26	11	60	101	101
Yes, which of the following? (check five (5) only.)								
--- Archery and rifle range	11	26	10	0	10	51	60	148
--- Boat ramps ; Fresh water	17	17	9	6	6	53	52	160
--- Boat ramps ; Lake	22	11	10	6	6	37	72	165
--- Boat ramps ; Saltwater	29	19	6	6	10	51	45	166
--- Bicycle/Hiking Trails	69	74	19	14	25	130	121	452
--- Camping facilities	46	35	12	4	12	110	123	312
--- Day use picnic areas	59	35	15	4	21	80	95	309
--- Golf Course	16	17	6	0	4	38	28	169
--- Indoor Sports Arena	44	54	9	11	11	92	90	311
--- Nature Trails	62	42	10	9	18	112	110	333
--- Playfields for sports activities	31	20	10	7	13	74	84	222
--- Offroad Vehicle Trail	22	22	9	2	4	37	47	143
--- Neighborhood playgrounds	12	30	17	4	12	55	71	217
--- Softball/Baseball diamonds	14	25	6	5	15	66	56	207
--- Swimming Pools - Indoor	22	115	15	16	19	184	197	561
--- Swimming Pools - Outdoor	26	42	11	7	14	100	124	321
--- Tennis Courts	51	37	11	9	15	111	92	291
--- Indoor Handball/Racquetball Courts	44	31	4	9	14	64	65	232
--- Indoor Community Centers/ Cultural Arts Centers	26	23	11	7	11	94	94	262

An attitude question number 7 indicated approximately 69% of the questionnaires returned were in favor of the County establishing additional park and recreation facilities in Skagit County.

Question 17 continued.

B. Rank order of responses	No. of Responses	% of Frequency of Responses
Swimming Pools Indoors	568	43
Bicycle/Hiking Trails	452	34
Nature Trails	333	25
Swimming Pools Outdoors	321	24
Camping Facilities	312	24
Sports Arenas - Indoors	311	24
Day use Picnic Facilities	309	23
Tennis Courts	298	23
Community & Cultural Arts Centers	263	20
Playfields for Sports Activities	239	18
Handball/Racquetball Courts - Indoor	233	17
Neighborhood Playgrounds	217	16
Softball Baseball Diamonds	207	15
Archery and Rifle Ranges	188	14
Saltwater Boat Ramps	166	12
Lake Boat Ramps	165	12
Fresh Water Boat Ramps (River*)	160	12
Offroad Vehicle Trail	143	11
Golf Courses	109	8

Have you participated in any recreational activities organized by Skagit County?	Anacortes	Burlington - Edison	Concrete	Conway	LaConner	Mt. Vernon	Sedro Woolley	Total
Yes	39	48	14	24	16	127	100	358
No	133	101	31	23	38	216	251	793
No response	15	6	3	8	3	6	110	151

The responses of this question indicates that in one year and six months of its existence, the recreation division of this Department has served approximately 28% of the County residents. The rate of this response could be attributed to several deficiencies, (1.) the lack of proper publicity 2.) poor selection of activities to be made available to the public 3.) the lack of a full time non CETA recreation staff and 4.) the fact that the programs offered the public must be for the most part self sufficient thus eliminating specific types of open playgrounds and programs that are typical of many recreation department

	Anacortes	Burlington - Edison	Concrete	Convny	LaConner	Mt. Vernon	Sedro Woolley	Total
1. A. Should the County plan, supervise, and conduct organized recreation activities?								
Yes	113	85	30	39	31	266	210	774
No	30	17	5	1	6	21	40	120
No response	87	69	13	17	16	74	142	313
2. If yes, which of the following?								
Adult Arts n Crafts Activities	36	32	9	16	15	94	108	313
Youth Arts n Crafts Activities	45	33	15	15	15	88	86	267
Adult Athletic Leagues	45	55	7	21	13	124	53	318
Youth Athletic Leagues	62	56	8	20	15	129	97	387
Adult Instructional Programs	37	24	7	14	8	85	71	246
County Wide Childrens Summer Playgrounds Program	62	41	18	16	19	115	145	416
Youth Instructional Programs	55	29	11	15	13	81	52	256
Adult Outdoor Education Programs	45	23	5	16	12	105	46	251
Youth Outdoor Education Programs	55	31	8	18	13	101	80	270
Varied County Wide Special Events (Fun Runs, Symphonies, Arts n Crafts Festivals, etc.)	72	43	14	22	19	157	71	398
Other(s) (specify) _____								

1. Another attitude question to determine the significance of such a service as recreation programming. Approximately 59% of the response were in favor of the County providing supervised recreation activities to the County residents. 9% of the population were not in favor of such a proposal and the remaining 32% indicated a no response to the question.

Question #9B continued
Rank Order of Responses

	<u>Number of Responses</u>	<u>% of Frequency of Response:</u>
--- County wide Children's summer playgrounds program	416	32
--- Varies County wide special events (Fun Runs, Symposiums, Arts n Crafts, Festivals, etc.)	398	30
--- Youth Athletic Leagues	387	29
--- Adult Athletic Leagues	318	24
--- Adult Arts-N-Crafts Activities	313	24
--- Youth Outdoor Education Programs	270	20
--- Youth Arts-N-Crafts Activities	267	20
--- Youth Instructional Programs	256	19
--- Adult Outdoor Education Programs	251	19
--- Adult Instructional Programs	246	18

	Anacortes	Burlington - Zuñon	Concrete	Conway	LaConner	Ht. Vernon	Sedro Woolley	Total
Develop a year round recreation activities program for the residents of Skagit County	55	89	19	33	15	156	118	455
H	75	67	14	18	19	127	128	448
L	30	10	6	2	9	26	28	121
H	8	4	0	3	7	11	4	37
Orient recreation facilities toward Skagit County residents, rather than towards tourists.								
H	84	85	22	22	32	168	180	593
H	50	64	9	28	12	132	124	419
L	29	8	10	4	5	28	26	110
H	23	4	2	4	5	12	4	59
Coordinate city and county recreation plans to avoid duplication.								
H	100	83	22	14	22	139	154	534
H	43	60	14	30	13	128	129	417
L	24	20	4	9	6	50	43	196
H	17	6	3	1	5	15	4	33
4) Develop joint use agreements between Skagit County School Districts and Skagit County for evening and/or weekend indoor facility use.	95	84	22	24	29	171	178	603
H	56	60	14	27	12	127	120	505
L	20	8	6	3	5	24	11	77
H	11	3	0	1	3	6	3	23
5) Develop a centrally located County:								
1. Cultural Arts Center	69	112	15	19	23	209	206	653
2. Athletic and Community Cntr.	41	52	15	31	18	94	122	374
3. Swimming Pool	43	8	7	2	4	22	16	101
4. A combination of the above.	19	2	3	3	7	13	5	52

(Question #10 continued)							
Anscortes	Burlington - Edison	Concrete	Conway	LaConner	Mt. Vernon	Sedro Woolley	Total
(6) Acquire and conserve land for future development and use, including prime scenic areas along the Skagit River, salt-water beaches, or in the mountains.							
104	96	22	17	28	187	174	628
49	50	13	26	12	114	123	387
23	17	5	7	1	28	27	108
10	4	3	4	5	7	5	38
(7) Develop outdoor facilities such as day and overnight camping sites, fishing, picnic areas, boat launches, etc.							
88	58	22	19	22	158	164	500
61	66	18	27	14	131	110	377
31	22	4	5	9	31	41	123
8	3	0	2	5	10	3	31
(8) Develop a system of open trails and pathways for horse riders, bicyclists, joggers, hikers.							
93	82	22	19	23	176	186	601
54	58	16	25	18	122	114	407
22	20	3	8	3	27	32	115
11	2	0	3	7	16	2	41
Other							

This question simply asks the individual to establish a priority rating in their own opinion of what should be the goal of the County Parks and Recreation Department in future planning. Those items responded to by priority or majority of "high" responses are as follows:

estation #10 continued

<u>% of Reasonable Frequency</u>	<u>Number of "High" Responses</u>	
49	653	Develop a centrally located County facility to include: 1. Cultural Arts Center 2. Athletic and Community Center, and 3. A Swimming Pool
47	628	Acquire and conserve land for future development and use, including prime scenic areas along the Skagit River saltwater beaches or in the mountains
45	603	Develop joint use agreements between Skagit County School Districts and Skagit County for evening and/or weekend facility use.
45	601	Develop a system of open trails and pathways for horse riders, bicyclists, joggers, and hikers.
45	555	Orient recreation facilities toward Skagit County residents rather than towards tourists.
40	534	Coordination of City and County recreation plans to avoid duplication.
40	532	Develop outdoor facilities such as day and overnight camping sites, fishing, picnic areas, boat launches, etc.
33	445	Develop a year round recreation activities program for the residents of Skagit County.

APPENDIX V

Partial Preliminary Acquisition Grant Application

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Application for Preliminary Acquisition Grant
for an Estuarine Sanctuary in Washington State
under the Provisions of Section 315 of the
Coastal Zone Management Act of 1972 - As
Amended

Dixie Lee Ray, Governor
State of Washington

Wilbur G. Hallauer
Director, Department of Ecology

January 19, 1979

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SECTION I - SITE SELECTION

The entire coastline of the State of Washington falls within the Columbian biogeographic province. This province, as defined by the Office of Coastal Zone Management, consists of "North Pacific coast from Cape Mendocino to Canada; mountainous shoreland; rocky coasts, extensive algal communities; biota, primarily temperate, with some boreal."

Estuaries in the State of Washington can be divided into five subcategories of the primary Columbian biogeographic province. These are:

1. Columbia River estuaries;
2. Cloacal Bay estuarine complexes such as Willapa Bay and Grays Harbor;
3. Streams having direct discharge into the Pacific Ocean;
4. The Puget Sound-Hood Canal estuarine complex; and,
5. Insular estuaries.

Since the Puget Sound-Hood Canal complex is unique among Pacific coastal estuaries, primary attention was given to potential sites in this subcategory. This position was also influenced by the fact that the State of Oregon has received a grant for the establishment of an estuarine sanctuary in Coos Bay and this action essentially compromised the possibility of establishing a sanctuary along Washington's Pacific coast.

A review of all streams entering Puget Sound and the Strait of Juan de Fuca was conducted and all those possessing estuaries greater than 25 acres in size were selected for more detailed analysis. Nine criteria were employed for this analysis and a rating of 0 to 5 was assigned for each. This resulted in a potential range of 0 to 45 for each estuarine system studied.

The criteria used in the evaluation were:

1. Degree of alteration of estuary;
2. Degree of alteration of the watershed;
3. Diversity of estuarine habitats;
4. Representativeness;
5. Potential stability;
6. Biologic productivity;
7. Influences external to the system;
8. Apparent feasibility of achieving the necessary control of the system; and,
9. Service to CZM program purposes.

APPENDIX VI

Partial Listing of Public Meetings Regarding Padilla Bay

Informational and discussion meetings with organizations, individuals, etc. with Padilla Bay Estuarine Sanctuary related interests.

Partial Listing of Public Meetings Regarding Padilla Bay

DATE	ORGANIZATION/GROUP, ETC.	REPRESENTATIVE
1-9-79	State Dept. of Game	Ralph Larson, Director/Jack Wayland, Ass't. Director
1-15-79	U.S. Fish & Wildlife Service	Joseph R. Blum, Area Manager
1-17-79	State Office of Arch. & Hist. Pres.	Sheila Stump, Supervisor - Archaeologist
1-25-79	Skagit Co. Planning Department	Bob Schofield, Director
1-30-79	Orion Corporation	Clint Morrow, Owner, Morrow Corporation
1-31-79	Oregon-Coos Bay Sanctuary Committee	Bill Cox, Director, Oregon Division of Lands
2-1-79	U.S. Department of Commerce/NOAA	Jim MacFarland, Estuarine Sanctuary Program
2-5-79	State Dept. of General Administration	Will Lewis, Supervisor, Real Property Division
2-7-79	State Outdoor Recreation Commission	Bob Wilder, Administrator
2-8-79	Wash. Public Ports Association	Jim Zimmerman, Administrative Assistant
2-13-79	Dept. of Natural Resources	Merv Howden, Marine Division
2-15-79	Washington Park Foundation	Joann Fisher, Executive Secretary
2-15-79	The Nature Conservancy	Elliott Marks, Regional Director
2-16-79	Port of Anacortes	Bob Keller, Director
2-16-79	Huxley College	Dr. Gil Peterson, Faculty
2-21-79	Skagit Co. Board of County Commissioners	County Commissioners
2-23-79	Shell Oil Refinery	Bill Malseed, Manager
2-23-79	Ducks Unlimited	Club Members
2-28-79	Swinomish Indian Tribal Community	Marvin Wilbur, Executive Director
2-28-79	Horton Dennis Company	Ken Yoshita, Owner
2-28-79	Texaco, Oil Refinery	Larry Dettman, Assistant Manager
3-5-79	Washington Environmental Council	Helen Engle, President
3-8-79	U. OF W., Div. of Marine Resources	Dr. Alan Duckspree, Faculty
3-9-79	Skagit Valley College	Dr. James M. Ford, President
3-19-79	State Dept. of Public Instruction	Dave Kennedy, Environmental Studies
3-22-79	Federation of Western Outdoor Clubs	Karen Fant, President
3-26-79	State Dept. of Fisheries	Frank Haw, Assistant Director
3-27-79	Pacific Science Center	Bonnie DeTurk, Director, School Services
3-27-79	U.S. Army Corps of Engineers	Dwain F. Hogan, Chief, Planning Branch
3-28-79	WWSC-Sundquist Marine Studies Center	Dr. Charles Flora, Director
3-28-79	State Parks & Recreation Commission	Jan Tveten, Assistant Director

<u>DATE</u>	<u>ORGANIZATION/GROUP, ETC.</u>	<u>REPRESENTATIVE</u>
4-3-79	Citizens	Glen Dickenson, Samish Island
4-4-79	Wn. State Natural Preserves Adv. Council	Amelia Heilman
4-13-79	Washington State Sportsman Council	John Stone, President
4-13-79	U. of W., Div. of Marine Resources	Dr. S. Murphy, Director
5-9-79	State Office of Financial Mangement	Bob Benson, Assistant Director
5-21-79	Seattle Times	Eric Prine, Staff Reporter
5-23-79	Charles Anderson & Associates	Charles Anderson, M.A.I.
5-30-79	Swinomish Gun Club	Al H. Clise, Vice President
5-31-79	Skagit Co. Prosecuting Attorney	C. Thomas Moser, Chief Civil Deputy
5-31-79	K.A.G.T. - Media Central/Radio	Nine Uncapher
6-8-79	La Conner Realty	Mark Sommers
6-8-79	Mt. Vernon Chamber of Commerce	Phylliss Codle, Manager
6-16-79	Samish Island Community Club	Holly Harper, Program Chairman
7-18-79	Skagit Regional Planning Council	Ian S. Munce, AICP, Executive Director
7-18-79	Sparks & Smith, Architects	Rick Sparks, Owner
7-19-79	Samish Campfire Council	Nancy Davis, Executive Director
7-23-79	U.S. Soil Conservation Service	Frank Easter, Director
7-25-79	U.S. General Accounting Office	Janet L. George, Management Analyst
7-30-79	Skagit Co. Cooperative Extension	Jack T. Crawford, Area Extension Agent
7-30-79	Anacortes School District	Dr. D.C. "Duane" Lowell, Superintendent
7-30-79	Anacortes Chamber of Commerce	Maria Petrish, Manager
7-31-79	City of Anacortes	Bob Olander, City Manager
8-3-79	State Legislature/Rep. Duane Berentson	Jay Holman - Legislative Staff
8-9-79	Mt. Vernon School District	Tom Pollino, Superintendent
8-9-79	Whatcom Co. Cooperative Extension	Fred Wepprecht, Community Resource Dev. Agent
8-9-79	Burlington School District	Nathanial Moore, Superintendent

APPENDIX VII

Padilla Bay Estuarine Sanctuary
Steering and Technical Committee Members

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Sparks & Smith, Architects

APPENDIX VIII

Partial List of Plants, Marine Invertebrates,
Fishes, Birds, and Mammals of Padilla Bay

Common Name

Scientific Name

Division Chrysophyta - Diatoms

Arachnodiscus ehrenbergi
Biddulphia alternans
Cheatoceros affinis
Cheatoceros decipiens
Coscinodiscus centralis
Coscinodiscus concinus
Coscinodiscus granii
Ditylum brightwelli
Isthmis nervosa
Melosira moniliformes
Navicula distans
Pleurosigma normanii
Pleurosigma sp.
Rhizosolenia spp.
Thalassionema nitzschioides

Division Chlorophyta - Green Algae

Cladophora sp.
Enteromorpha linza
Enteromorpha sp.
Monostroma fuscum
Monostroma zostericola
Pterochondria woodii
Rhizoclonium sp.
Ulva lactuca
Urospora sp.

Sea lettuce

Division Phaeophyta - Brown Algae

Rockweed

Costaria costata
Ectocarpus sp.
Fucus distichus
Fucus sp.
Laminaria saccharina
Laminaria sp.
Nereocystis leutkeana
Petalonia sp.
Polyneura latissima
Sargassum muticum
Scytosiphon sp.

Bladder kelp

Division Rhodophyta - Red Algae

Laver

Botryoglossum farlowianum
Ceramium californicum
Ceramium sp.
Gonimophyllum skottsbergi
Gracilariopsis sirostedtii
Odonthalis washingtonensis
Polysiphonia sp.
Porphyra spp.
Tiffaniella snyderae

¹ Compiled from Sylvester and Clogston 1958, U.S. Army Corps of Engineers 1976, Smith and Benedict 1977, and observations of Washington Department of Game personnel during this study.

	<u>Common Name</u>	<u>Scientific Name</u>
Division Lycopodiophyta		
Family Selaginellaceae	Wallace's selaginella	<u>Selaginella wallacei</u>
Division Equisetophyta		
Family Equisetaceae	Common horsetail	<u>Equisetum arvense</u>
	Giant horsetail	<u>Equisetum telmateia</u>
Division Polypodiophyta		
Family Polypodiaceae	Shield-fern	<u>Dryopteris</u> sp.
	Gold-back fern	<u>Pityrogramma triangularis</u>
	Sword-fern	<u>Polystichum</u> sp.
	Licorice-fern	<u>Polypodium glycyrrhiza</u>
	Bracken-fern	<u>Pteridium aquilinum</u>
Division Pinophyta		
Family Cupressaceae	Juniper	<u>Juniperus scopulorum</u>
	Western red cedar	<u>Thuja plicata</u>
Family Pinaceae	Grand fir	<u>Abies grandis</u>
	Sitka spruce	<u>Picea sitchensis</u>
	Shore pine	<u>Pinus contorta</u>
	Douglas fir	<u>Pseudotsuga menziesii</u>
Division Magnoliophyta		
Family Salicaceae	Black cottonwood	<u>Populus trichocarpa</u>
	Willow	<u>Salix</u> spp.
Family Betulaceae	Red alder	<u>Alnus rubra</u>
Family Fagaceae	Garry oak	<u>Quercus garryana</u>
Family Urticaceae	Stinging nettle	<u>Urtica dioica</u>
Family Polygonaceae	Sheep sorrel	<u>Rumex acetosella</u>
Family Chenopodiaceae	Fat-Hen	<u>Artriplex patula</u>
	Pickleweed	<u>Salicornia virginica</u>
Family Caryophyllaceae	Field chickweed	<u>Cerastium arvense</u>
	Sandspurry	<u>Spergularia</u> sp.
Family Berberidaceae	Oregon grape	<u>Berberis nervosa</u>
Family Brassicaceae (Cruciferae)	Field mustard	<u>Brassica campestris</u>
	Peppergrass	<u>Lepidium virginicum</u> var. <u>menziesii</u>
Family Grossulariaceae	Currant	<u>Ribes</u> sp.
	Foam flower	<u>Tiarella trifoliata</u>
Family Rosaceae	Hawthorn	<u>Crataegus monogyna</u>
	Avens	<u>Geum/macrophyllum</u>
	Ocean-spray	<u>Holodiscus discolor</u>
	Osoberry	<u>Osmaronia cerasiformis</u>
	Western crabapple	<u>Pyrus fusca</u>
	Nootka rose	<u>Rosa nutkana</u>
	Clustered wild rose	<u>Rosa pisocarpa</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Family Rosaceae	Himalayan blackberry	<u>Rubus discolor</u>
	Evergreen blackberry -	<u>Rubus laciniatus</u>
	Thimbleberry	<u>Rubus parviflorus</u>
	Salmonberry	<u>Rubus spectabilis</u>
	Trailing blackberry	<u>Rubus ursinus</u>
	Hard-hack	<u>Spiraea douglasii</u>
Family Fabaceae (Leguminosae)	Beach pea	<u>Lathyrus japonicus</u>
	Scot's broom	<u>Cytisus scoparius</u>
	Clover	<u>Trifolium</u> spp.
	Giant vetch	<u>Vicia gigantea</u>
	Vetch	<u>Vicia</u> sp.
Family Celastraceae	Mountain-box	<u>Pachistima myrsinites</u>
Family Aceraceae	Vine maple	<u>Acer circinatum</u>
	Big-leaf maple	<u>Acer macrophyllum</u>
Family Rhamnaceae	Cascara	<u>Rhamnus purshiana</u>
Family Onagraceae	Fireweed	<u>Epilobium angustifolium</u>
	Willow-herb	<u>Epilobium</u> sp.
Family Hippuridaceae	Mare's-tail	<u>Hippuris vulgaris</u>
Family Araliaceae	Ivy	<u>Hedera helix</u>
Family Apiaceae (Umbelliferae)	Queen Anne's lace	<u>Daucus carota</u>
	Cow-parsnip	<u>Heracleum lanatum</u>
	Water-parsley	<u>Oenanthe sarmentosa</u>
Family Cornaceae	Pacific dogwood	<u>Cornus nuttallii</u>
Family Ericaceae	Pacific madrone	<u>Arbutus menziesii</u>
	Salal	<u>Gaultheria shallon</u>
	Pacific rhododendron	<u>Rhododendron macrophyllum</u>
	Red huckleberry	<u>Vaccinium parvifolium</u>
Family Primulaceae	Saltwort	<u>Glaux maritima</u>
	Western starflower	<u>Trientalis latifolia</u>
Family Cuscutaceae	Salt marsh dodder	<u>Cuscuta salina</u>
Family Boraginaceae	Seaside amsinckia	<u>Amsinckia spectabilis</u>
Family Scrophularia ceae	Foxglove	<u>Digitalis purpurea</u>
	Parentucellia	<u>Parentucellia viscosa</u>
Family Plantaginaceae	Ribwort	<u>Plantago lanceolata</u>
	Seaside plantain	<u>Plantago maritima</u>
Family Rubiaceae	Bedstraw	<u>Galium</u> sp.
Family Caprifoliaceae	Red elderberry	<u>Sambucus racemosa</u> var <u>arborescens</u>
	Snowberry	<u>Symphoricarpos albus</u>
Family Asteraceae (Compositae)	Common yarrow	<u>Achillea millefolium</u>
	False-dandelion	<u>Agoseris</u> sp.
	Silver bursage	<u>Ambrosia chamissonis</u> var. <u>bipinnatisecta</u>
	Pearly-everlasting	<u>Anaphalis margaritacea</u>
	Coastal mugwort	<u>Artemisia suksdorfii</u>
	Canada thistle	<u>Cirsium arvense</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Family Asteraceae (Compositae)	Bull thistle	<u>Cirsium vulgare</u>
	Oxeye daisy	<u>Chrysanthemum leucanthemum</u>
	Eriophyllum	<u>Eriophyllum lanatum</u>
	Gumweed	<u>Grindelia integrifolia</u>
	Smooth cat's-ear	<u>Hypochaeris glabra</u>
	Hairy cat's-ear	<u>Hypochaeris radicata</u>
	Old-man-in-the-spring	<u>Senecio vulgaris</u>
	Goldenrod	<u>Solidago sp.</u>
	Common tansy	<u>Tanacetum vulgare</u>
	Common dandelion	<u>Taraxacum officinale</u>
Family Juncaginaceae	Seaside arrow-grass	<u>Triglochin maritimum</u>
Family Potamogetonaceae	Ribbon-leaf pondweed	<u>Potamogeton epihydrus</u>
Family Ruppiaceae	Wideon-grass	<u>Ruppia maritima</u>
Family Zosteraceae	Eelgrass	<u>Zostera marina</u>
	Dwarf eelgrass	<u>Zostera noltii</u>
Family Juncaceae	Baltic rush	<u>Juncus balticus</u>
	Soft rush	<u>Juncus effusus</u>
	Mud rush	<u>Juncus gerardii</u>
	Smallflowered woodrush	<u>Luzula parviflora</u>
Family Cyperaceae	Lyngby's sedge	<u>Carex lyngbyei</u>
	Bighead sedge	<u>Carex macrocephala</u>
	Slough sedge	<u>Carex obnupta</u>
	Hardstem bulrush	<u>Scirpus acutus</u>
Family Poaceae (Graminae)	Quack grass	<u>Agropyron repens</u>
	Bentgrass	<u>Agrostis alba</u>
	Cheat grass	<u>Bromus tectorum</u>
	Orchard-grass	<u>Dactylis glomerata</u>
	Tufted hairgrass	<u>Deschampsia cespitosa</u>
	Saltgrass	<u>Distichlis spicata</u>
	American dunegrass	<u>Elymus mollis</u>
	Idaho fescue	<u>Festuca idahoensis</u>
	Red fescue	<u>Festuca rubra</u>
	Velvet-grass	<u>Holcus mollis</u>
	Reed canarygrass	<u>Phalaris arundinacea</u>
	Kentucky bluegrass	<u>Poa pratensis</u>
	Alkaligrass	<u>Puccinellia distans</u>
	Smooth cordgrass	<u>Spartina alterniflora</u>
Family Typhaceae	Common cat-tail	<u>Typha latifolia</u>
Family Lemnaceae	Duckweed	<u>Lemna minor</u>
Family Liliaceae	Starry Solomon-plume	<u>Similacina stellata</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Phylum Cnidaria		
Class Hydrozoa		
Order Hydroida	Sea Fir	<u>Abietinaria</u> sp.
	Orange-striped Jellyfish	<u>Aglaophenia</u> sp. <u>Gonionemus vertens</u> <u>Obelia</u> sp. <u>Sertularella</u> sp.
Class Scyphozoa		
Order Stauromedusae	Stalked jellyfish	<u>Halicystus auricula</u>
Class Anthozoa		
Subclass Zoantharia		<u>Anthopleura elegantissima</u>
Order Actiniaria	Brooding sea anemone	<u>Edwardsia sibunculoides</u> <u>Epiactis prolifera</u> <u>Tealis</u> sp.
Phylum Ctenophora		
Class Tentaculata	Sea gooseberry	<u>Pleurobrachia bachei</u>
Phylum Platyhelminthes	Flatworm	Unidentified species
Phylum Nemertea	Ribbon worm	Unidentified species
Class Anopla		
Order Heteronemertea		<u>Cerebratulus californiensis</u>
Class Enopla		
Order Hoplonemertea	Restless worm	<u>Amphiporus bimaculatus</u> <u>Emplectonema gracile</u> <u>Paranemertes peregrina</u>
Phylum Nematoda		Unidentified species
Phylum Mollusca		
Class Amphineura		
Subclass Polyphacophora	Mossy chiton	<u>Mopalia muscosa</u>
Class Gastropoda		
Subclass Prosobranchia	Turret snail	<u>Assiminea californica</u> <u>Batillaria attramentaria</u> <u>Bittium</u> sp.
	Blue top shell	<u>Calliostoma ligatum</u> <u>Cecina manchurica</u>
	Finger limpet	<u>Collisella digitalis</u>
	Shield limpet	<u>Collisella pelta</u>
	Hooked slipper shell	<u>Crepidula adunca</u>
	Slipper shell	<u>Crepidula</u> sp.

¹ Compiled from Sylvester and Clogston 1958, Goodwin 1974, Smith and Benedict 1977, Webber unpublished data, and observations of Washington Department of Game personnel during this study.

	<u>Common Name</u>	<u>Scientific Name</u>
	Keyhole limpet	<u>Diodora aspera</u>
	Chink shell	<u>Lacuna variegata</u>
	Sitka periwinkle	<u>Littorina sitkana</u>
	Checkered periwinkle	<u>Littorina scutulata</u>
	Margarite snail	<u>Margarites pupillus</u>
	Basket shell	<u>Nassarius fraterculus</u>
	Large variegated limpet	<u>Notoacmea persona</u>
	Plate limpet	<u>Notoacmea scutum</u>
	Japanese oyster drill	<u>Ocenebra japonica</u>
	Wrinkled thais	<u>Thais lamellosa</u>
	Limpet	Unidentified sp.
Subclass Opisthobranchia		
Order Anaspidea		<u>Phyllaplysia taylori</u>
Order Cephalaspidea		<u>Aglaia diomedea</u>
	Bubble shell	<u>Haminoea</u> sp.
		<u>Cylichna</u> sp.
		<u>Retusa harpa</u>
Order Nudibranchia		
Suborder Eolidacea	Opalescent nudibranch	<u>Hermisenda crassicornis</u>
Suborder Doridacea		Unidentified sp
Subclass Pulmonata		<u>Phytia (Ovatella) myosotis</u>
Class Bivalvia	Sculptured nut clam	<u>Acila castrensis</u>
		<u>Axinopsida serricata</u>
	Heart cockle	<u>Clinocardium nuttallii</u>
		<u>Clinocardium</u> sp.
	Japanese oyster	<u>Crassostrea gigas</u>
		<u>Crenella</u> sp.
		<u>Cryptomya californica</u>
		<u>Lucinoma</u> sp.
	Dipper clam	<u>Lyonsia californica</u>
		<u>Lyonsia striata</u>
	Polluted macoma	<u>Macoma balthica</u>
	Bent-nosed clam	<u>Macoma inquinata</u>
		<u>Macoma nasuta</u>
		<u>Macoma obliqua</u>
	Sand clam	<u>Macoma secta</u>
	Eastern soft-shell clam	<u>Mya arenaria</u>
	Blunt soft-shell clam	<u>Mya truncata</u>
		<u>Mysella tumida</u>
	Blue mussel	<u>Mytilus edulis</u>
		<u>Nucula tenuis</u>
		<u>Nuculana hamata</u>
		<u>Nuculana minuta</u>
	Rock oyster	<u>Pododesmus macroschisma</u>

Common NameScientific Name

Native littleneck clam

Protothaca staminea.
Protothaca sp.

Washington clam

Psephidia lordi

Jackknife clam

Saxidomus giganteus

Japanese littleneck clam

Solen sicarius

White tellen

Tapes japonicaTellina modestaTellina sp.Transennella tantilla

Horse clam

Tresus capaxYoldia thraciaeformis

Phylum Annelida

Class Polychaeta

Family Ampharetidae

Amphareta arctica

Family Aphroditidae

Unidentified sp.

Family Arenicolidae

Lugworm

Abarenicola pacifica

Rough-skinned lugworm

Abarenicola claparedii

Family Capitellidae

Capitella capitataCapitella sp.Notomastus tenuisNotomastus sp.Mediomastus sp.

Family Cirratulidae

Chaetozone setosaChaetozone sp.

Unidentified sp.

Family Dorvilleidae

Dorvillea annulataProtodorvillea gracilis

Family Glyceridae

Glycera americanaGlycera sp.

Iridescent worm

Hemipodus borealis

Family Goniadidae

Glycinde picta

Family Hesionidae

Gyptis brevipalpaOphiodromus pugettensis

Family Lumbrineridae

Lumbrineris latreilli

Family Maldanidae

Bamboo worm

Axiothella rubrocinctaMaldane glebiflexEuclymene zonalis

Family Nephtyidae

Nephtys caecaNephtys ciliata

Family Nereidae

Clam worm

Nereis brandtiPlatynereis bicanaliculata

Family Onuphidae

Onuphis elegans

Unidentified sp.

	<u>Common Name</u>	<u>Scientific Name</u>
Family Terebellidae		<u>Amphitrite cirrata</u> <u>Eupolyornia heterobranchia</u> <u>Pista</u> sp. <u>Polycirrus kerguelensis</u> Unidentified sp.
Class Oligochaeta		
Phylum Priapulida		<u>Priapulus caudatus</u>
Phylum Sipuncula		<u>Golfingia pugettensis</u> <u>Siphonoscma ingens</u> Unidentified sp.
Phylum Arthropoda		
Class Crustacea		
Subclass Branchiopoda		<u>Podon</u> sp.
Order Cladocera		Unidentified sp.
Subclass Ostracoda		<u>Microsetella norvegica</u>
Subclass Copepoda		<u>Acartia clausi</u> <u>Calanus finmarchicus</u> <u>Microcalanus pusillus</u> <u>Pseudocalanus minutus</u>
Order Calanoida		<u>Harpacticus</u> spp. <u>Corycaeus affinis</u> Unidentified sp.
Order Harpacticoida		
Order Cyclopoida		
Order Monstrilloida		
Subclass Cirripedia		
Order Thoracica	Horse barnacle	<u>Balanus cariosus</u> <u>Balanus crenatus</u> <u>Balanus glandula</u>
	Acorn barnacle	
Subclass Malacostraca		
Superorder Phyllocarida		
Order Leptostraca		<u>Nebalia</u> sp.
Superorder Peracarida		
Order Cumacea		<u>Diastylis</u> sp. <u>Oxyurostylis</u> sp. <u>Leptochelia savignyi</u> <u>Leptochelia</u> sp. <u>Pancolus californiensis</u> Unidentified sp.
Order Tanaidacea		
Order Isopoda		
Suborder Valvifera	Eelgrass isopod	<u>Idotea aculeata</u> <u>Idotea fewkesi</u> <u>Idotea resicata</u> <u>Idotea rufescens</u>

	<u>Common Name</u>	<u>Scientific Name</u>
	Olive green isopod	<u>Idotea wosnesenskii</u> <u>Snyidotea angulata</u> <u>Snyidotea bicuspidata</u> <u>Paranthura elegans</u> <u>Gnorimosphaeroma oregonens</u>
Suborder Anthuridea		
Suborder Flabellifera	Oregon pill bug	
Order Amphipoda		
Suborder Hyperiidea		Unidentified sp.
Suborder Gammaridea		<u>Ampelisca pugettica</u> <u>Ampithoe lacertosa</u> <u>Ampithoe valida</u> <u>Anisogammarus confervicolu</u> <u>Anisogammarus pugettensis</u> <u>Aoroides columbiae</u> <u>Corophium</u> sp. <u>Hyale frequens</u> <u>Ischrocerus anquipes</u> <u>Melita dentata</u> <u>Orchestia transkiana</u> <u>Orchomene</u> sp. <u>Parallorchestes ochotensi</u> <u>Paraphoxus</u> sp. <u>Photis brevipes</u> <u>Photis</u> sp. <u>Pontogenia</u> sp. <u>Protomedia</u> sp.
	Beach hopper	Unidentified sp.
		Unidentified sp.
	Corophid	Unidentified sp.
	Gammarid	Unidentified sp.
	Lysianassid	Unidentified spp.
	Phoxocephalid	<u>Caprella leviuscula</u> <u>Metacaprella anomala</u> <u>Metacaprella kennerlyi</u> Unidentified sp.
Suborder Caprellidea	Skelton shrimp	
Superorder		
Order Decapoda		
Suborder Natantia		
Section Caridea		
Family Crangonidae	Gray shrimp	<u>Crangon nigricanda</u> <u>Sclerocrangon alata</u> Unidentified sp.
Family Hippolytidae		

	<u>Common Name</u>	<u>Scientific Name</u>
Suborder Reptantia		
Section Astacura		
Superfamily Thallassinoidea	Ghost shrimp	<u>Callinassa californiensis</u>
	Mud shrimp	<u>Upogebia pugettensis</u>
Section Anomura		
Superfamily Galatheoidea	Porcelain crab	<u>Petrolisthes eriomerus</u>
Superfamily Paguroidea	Hermit crab	<u>Pagurus granosimanus</u>
	Hairy hermit crab	<u>Pagurus hirsutiusculus</u>
		<u>Pagurus kennerlyi</u>
Section Brachyura		
Subsection Brachygnatha		
Infrasubsection Oxyrhyncha	Decorator crab	<u>Oregonia gracilis</u>
	Spider crab	<u>Pugettis gracilis</u>
	Kelp crab	<u>Pugettia producta</u>
Infrasubsection Brachyrhyncha		
	Dungeness crab	<u>Cancer magister</u>
	Red rock crab	<u>Cancer productus</u>
	Purple shore crab	<u>Hemigrapsus nudus</u>
	Green shore crab	<u>Hemigrapsus oregonensis</u>
		<u>Pinnixa occidentalis</u>
		<u>Pinnixa schmitti</u>
	Burrow crab	<u>Pinnixa tubicola</u>
	Helmet crab	<u>Telmessus cheiragonus</u>
Phylum Bryozoa		Unidentified sp.
Phylum Brachiopoda	Lamp shell	<u>Terebratalia transversa</u>
Phylum Echinodermata		
Class Ophiuroidea		<u>Amphiodia urtica</u>
		<u>Diamphiodia periercta</u>
		Unidentified sp.
Class Asteroidea	Blood star	<u>Henricia leviuscula</u>
	Six-rayed sea star	<u>Leptasterias hexactis</u>
		<u>Pisaster ochraceus</u>
Class Echinoidea	Sunflower star	<u>Pycnopodia helianthoides</u>
	Green sea urchin	<u>Strongylocentrotus</u>
		<u>droebachiensis</u>
Class Holothuroidea	Red sea cucumber	<u>Cucumaria miniata</u>
	White sea cucumber	<u>Eupentacta quinguesemita</u>
		<u>Leptosynapta</u> sp.
Phylum Chaetognatha	Arrow worm	<u>Sagitta elegans</u>

Phylum Chordata
Subphylum Urochordata
Class Larvacea
Class Ascidiacea

Common Name

Scientific Name

Hairy sea squirt	<u>Oikopleura</u> sp.
Broad base sea squirt	<u>Boltenia villosa</u>
Warty sea squirt	<u>Cnemidocarpa finmarkiensis</u>
	<u>Pvura haustor</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Family Pholidae	Penpoint gunnel	<u>Apodichthys flavidus</u> .
	Crescent gunnel	<u>Pholis laeta</u>
	Saddleback gunnel	<u>Pholis ornata</u>
Family Ammodytidae	Pacific sand lance	<u>Ammodytes hexapterus</u>
Order Scorpaeniformes		
Family Scorpaenidae	Yellow rockfish	<u>Sebastes flavidus</u>
	Sharpchin rockfish	<u>Sebastes zacentrus</u>
Family Hexagrammidae	Lingcod	<u>Ophiodon elongatus</u>
Family Cottidae	Padded sculpin	<u>Artedius fenestralis</u>
	Silverspotted sculpin	<u>Blepsias cirrhosus</u>
	Buffalo sculpin	<u>Enophrys bison</u>
	Soft sculpin	<u>Gilbertidia sigalutes</u>
	Pacific staghorn sculpin	<u>Leptocottus armatus</u>
	Great sculpin	<u>Myoxocephalus</u> <u>polyacanthocephalus</u>
	Sailfin sculpin	<u>Nautichthys oculoasciatus</u>
	Tadpole sculpin	<u>Psychrolutes paradoxus</u>
	Grunt sculpin	<u>Phanphocottus richardsoni</u>
	Ribbed sculpin	<u>Triglops pingeli</u>
Family Agonidae	Sturgeon poacher	<u>Agonus acipenserinus</u>
	Smooth alligator fish	<u>Anoplagonus inermis</u>
	Tubenose poacher	<u>Pallasina barbata</u> aix
Family Cyclopteridae	Pacific spiny lumpsucker	<u>Eumicrotremus orbis</u>
	Spotted snailfish	<u>Liparis callyodon</u>
	Tidepool snailfish	<u>Liparis florae</u>
Order Pleuronectiformes		
Family Bothidae	Speckled sanddab	<u>Citharichthys stigmaeus</u>
Family Pleuronectidae	Arrowtooth flounder	<u>Atheresthes stomias</u>
	Rock sole	<u>Lepidopsetta bilineata</u>
	Slender sole	<u>Lyopsetta exilis</u>
	Dover sole	<u>Microstomus pacificus</u>
	English sole	<u>Parophrys vetulus</u>
	Starry flounder	<u>Platichthys stellatus</u>
	Sand sole	<u>Psettichthys melanostictus</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Class Chondrichthyes		
Subclass Elasmobranchii		
Order Squaliformes		
Family Squalidae	Spiny dogfish	<u>Squalus acanthias</u>
Order Rajiformes	Big Skate	<u>Raja binoculata</u>
Family Rajidae		
Subclass Holocephali		
Order Chimaeriformes		
Family Chimaeridae	Ratfish	<u>Hydrolagus colliei</u>
Class Osteichthyes		
Order Clupeiformes		
Family Clupeidae	Pacific herring	<u>Clupea harengus pallasii</u>
Family Engraulidae	Northern anchovy	<u>Engraulis mordax mordax</u>
Order Salmoniformes	Pink salmon	<u>Oncorhynchus gorbuscha</u>
Family Salmonidae	Chum salmon	<u>Oncorhynchus keta</u>
	Coho salmon	<u>Oncorhynchus kisutch</u>
	Sockeye salmon	<u>Oncorhynchus nerka</u>
	Chinook salmon	<u>Oncorhynchus tshawytscha</u>
	Coastal cutthroat trout	<u>Salmo clarki clarki</u>
	Dolly Varden	<u>Salvelinus malma</u>
Family Osmeridae	Surf smelt	<u>Hypomesus pretiosus pretiosus</u>
	Longfin smelt	<u>Spirinchus thaleichthys</u>
Order Myctophiformes		
Family Myctophidae	Northern lampfish	<u>Stenobrachius leucopsarus</u>
Order Gobiiesociformes		
Family Gobiiesocidae	Northern clingfish	<u>Gobiesox maeandricus</u>
Order Gadiformes		
Family Gadidae	Pacific tomcod	<u>Microgadus proximus</u>
Family Ophidiidae	Red brotula	<u>Brosmophycis marginata</u>
Family Zoarcidae	Blackbelly eelpout	<u>Lycodopsis pacifica</u>
Order Gasterosteiformes		
Family Gasterosteidae	Threespine stickleback	<u>Gasterosteus aculeatus</u>
Family Syngnathidae	Bay pipefish	<u>Syngnathus griseolineatus</u>
Order Perciformes	Shiner perch	<u>Cymatogaster aggregata</u>
Family Embiotocidae		
Family Trichodontidae	Pacific sandfish	<u>Trichodon trichodon</u>
Family Stichaeidae	Snake prickleback	<u>Lumpenus sagitta</u>
	Bluebarred prickleback	<u>Plectobranthus evides</u>
	Black prickleback	<u>Xiphister atropurpureus</u>

- 1 Compiled from Sylvester and Clogston 1958, DeLacey and Miller 1972, Miller et al. unpublished data.
- 2 Nomenclature after Hart 1973.

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	Buffalo sculpin	<u>Enophrys bison</u>
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	Great sculpin	<u>Myoxocephalus</u> <u>polyacanthocephalus</u>
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	Grunt sculpin	<u>Phamphocottus richardsoni</u>
Family Agonidae	Ribbed sculpin	<u>Triglous pinelli</u>
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	Sand sole	<u>Psettichthys melanostictus</u>

<u>Common Name</u> - - - - -	<u>Scientific Name</u> - - -
Common Loon	<u>Gavia immer</u>
Yellow-billed Loon	<u>Gavia adamsii</u>
Arctic Loon	<u>Gavia arctica</u>
Red-throated Loon	<u>Gavia stellata</u> - -
Red-necked Grebe	<u>Podiceps grisegena</u>
Horned Grebe - - - - -	<u>Podiceps auritus</u>
Eared Grebe	<u>Podiceps nigricollis</u>
Western Grebe	<u>Aechmophorus occidentalis</u>
Pied-billed Grebe - - - - -	<u>Podilymbus podiceps</u>
Double-crested Cormorant	<u>Phalacrocorax auritus</u>
Brandt's Cormorant	<u>Phalacrocorax penicillatus</u>
Pelagic Cormorant	<u>Phalacrocorax pelagicus</u>
Great Blue Heron	<u>Ardea herodias</u>
Green Heron	<u>Butorides virescens</u>
Great Egret	<u>Casmerodius albus</u>
Black-crowned Night Heron	<u>Nycticorax nycticorax</u>
American Bittern	<u>Botaurus lentiginosus</u>
Whistling Swan	<u>Olor columbianus</u>
Trumpeter Swan.	<u>Olor buccinator</u>
Canada Goose	<u>Branta canadensis</u>
Black Brant	<u>Branta bernicla</u>
White-fronted Goose	<u>Anser albifrons</u>
Snow Goose	<u>Chen caerulescens</u>
Mallard	<u>Anas platyrhynchos</u>
Gadwall	<u>Anas strepera</u>
Pintail	<u>Anas acuta</u>
Green-winged Teal	<u>Anas crecca</u>
Blue-Winged Teal	<u>Anas discors</u>
Cinnamon Teal	<u>Anas cyanoptera</u>
European Wigeon	<u>Anas penelope</u>
American Wigeon	<u>Anas americana</u>
Northern Shoveler	<u>Anas clypeata</u>
Wood Duck	<u>Aix sponsa</u>
Redhead	<u>Aythya americana</u>
Ring-necked Duck	<u>Aythya collaris</u>
Canvasback	<u>Aythya valisineria</u>
Greater Scaup	<u>Aythya marila</u>
Lesser Scaup	<u>Aythya affinis</u>
Common Goldeneye	<u>Bucephala clangula</u>
Barrow's Goldeneye	<u>Bucephala islandica</u>

<u>Common Name</u>	<u>Scientific Name</u>
Bufflehead	<u>Bucephala albeola</u> -
Oldsquaw	<u>Clangula hyemalis</u>
Harlequin Duck	<u>Histrionicus histrionicus</u>
White-winged Scoter	<u>Melanitta deglandi</u>
Surf Scoter	<u>Melanitta perspicillata</u>
Black Scoter	<u>Melanitta nigra</u>
Ruddy Duck	<u>Oxyura jamaicensis</u>
Hooded Merganser	<u>Lophodytes cucullatus</u>
Common Merganser	<u>Mergus merganser</u>
Red-breasted Merganser	<u>Mergus serrator</u> ..
Turkey Vulture . - -	<u>Cathartes aura</u>
Goshawk	<u>Accipiter gentilis</u>
Sharp-shinned Hawk	<u>Accipiter striatus</u>
Cooper's Hawk	<u>Accipiter cooperii</u>
Red-tailed Hawk	<u>Buteo jamaicensis</u>
Swanson's Hawk	<u>Buteo swainsoni</u>
Rough-legged Hawk	<u>Buteo lagopus</u>
Bald Eagle	<u>Haliaeetus leucocephalus</u>
Marsh Hawk	<u>Circus cyaneus</u>
Osprey	<u>Pandion haliaetus</u>
Gyrfalcon -	<u>Falco rusticolus</u>
Prairie Falcon	<u>Falco mixicanus</u>
Peregrine Falcon	<u>Falco peregrinus</u>
Merlin	<u>Falco columbarius</u>
American Kestrel	<u>Falco sparverius</u>
Blue Grouse	<u>Dendragapus obscurus</u>
Ruffed Grouse	<u>Bonasa umbellus</u>
California Quail	<u>Lophortyx californicus</u>
Ring-necked Pheasant	<u>Phasianus colchicus</u>
Sandhill Crane	<u>Grus canadensis</u>
Virginia Rail	<u>Rallus limicola</u>
Sora,	<u>Porzana carolina</u>
American Coot	<u>Fulica americana</u>
Black Oystercatcher	<u>Haematopus bachmani</u>
Semipalmated Plover	<u>Charadrius semipalmatus</u>
Killdeer	<u>Charadrius vociferus</u>
American Golden Plover	<u>Pluvialis dominica</u>
Black-bellied Plover	<u>Pluvialis squatarola</u>
Surfbird ~	<u>Aphriza virgata</u>
Ruddy Turnstone	<u>Arenaria interpres</u>
Black Turnstone	<u>Arenaria melanocephala</u>
Common Snipe	<u>Capella gallinago</u>
Long-billed Curlew	<u>Numenius americanus</u>
Whimbrel	<u>Numenius phaeopus</u>
Spotted Sandpiper	<u>Actitis macularia</u>
Solitary Sandpipe	<u>Tringa solitaria</u>
Wandering Tattler	<u>Heteroscelus incanus</u>
Greater Yellowlegs	<u>Tringa melanoleuca</u>

<u>Common Name</u>		<u>Scientific Name</u>
Family Opheliidae		<u>Armandia brevis</u>
Family Orbinidae		<u>Haploscolophos elongatus</u>
		<u>Nainereis</u> sp.
		<u>Scoloplos armiger</u>
		<u>Scoloplos pugettensis</u>
Family Oweniidae		<u>Myriochele oculata</u>
		<u>Owenia fulsiformis</u>
Family Paraonidae		<u>Aricidea</u> sp.
Family Phyllodocidae		<u>Eteone longa</u>
		<u>Eteone</u> sp.
		<u>Eulalia sanguinea</u>
		<u>Eulalia</u> sp.
		<u>Phyllodoce maculata</u>
		<u>Phyllodoce</u> sp.
Family Polynoidae		<u>Harmothoe imbricata</u>
		<u>Harmothoe</u> sp.
		<u>Lepidonotus squamatus</u>
		Unidentified sp.
Family Sabellidae		<u>Chone infundibuliformis</u>
		<u>Fabricia sabella oregonica</u>
		<u>Potamilla neglecta</u>
	Plume worm	<u>Pseudopotamilla reniformis</u>
		Unidentified sp.
Family Scalibregmidae		<u>Scalibregma inflatum</u>
Family Serpulidae	Calcareous tube worm	<u>Serpula vermicularis</u>
		Unidentified sp.
Family Sigalionidae		<u>Pholoe minuta</u>
		Unidentified sp.
Family Spionidae		<u>Boccardia</u> sp.
		<u>Polydora californica</u>
		<u>Polydora ligni</u>
		<u>Polydora</u> sp.
		<u>Prionospio cirrifera</u>
		<u>Prionospio pinnata</u>
		<u>Prionospio steenstrupi</u>
		<u>Pseudopolydora kemp</u> jap.
		<u>Scoelelepsis foliosa</u>
		<u>Scoelelepsis</u> sp.
		<u>Spio filicornis</u>
		<u>Spiophanes bombyx</u>
		<u>Spiophanes cirrata</u>
		Unidentified sp.
Family Sternaspidae	Sea grub	<u>Sternaspis fossor</u>
Family Syllidae		<u>Exogone</u> sp.
		<u>Syllis</u> sp.

<u>Common Name</u>	<u>Scientific Name</u>
Lesser Yellowlegs- - - - -	<u>Tringa flavipes</u>
Red Knot	<u>Calidris canutus</u>
Rock Sandpiper	<u>Calidris ptilocnemis</u>
Sharp-tailed Sandpiper	<u>Calidris acuminata</u>
Pectoral Sandpiper	<u>Calidris melanotos</u>
Baird's Sandpiper- - - -	<u>Calidris bairdii</u>
Least Sandpiper	<u>Calidris minutilla</u>
Dunlin --	<u>Calidris alpina</u>
Short-billed Dowitcher	<u>Limnodromus griseus</u>
Long-billed Dowitcher -- - - -	<u>Limnodromus scolopaceus</u>
Stilt Sandpiper	<u>Micropalama himantopus</u>
Semipalmated Sandpiper--- --	<u>Calidris pusillus</u>
Western Sandpiper	<u>Calidris mauri</u>
Marbled Godwit	<u>Limosa fedoa</u>
Sanderling	<u>Calidris alba</u>
Wilson's Phalarope	<u>Steganopus tricolor</u>
Northern Phalarope	<u>Lopipes lobatus</u>
Parasitic Jaeger	<u>Stercorarius parasiticus</u>
Glaucous Gull	<u>Larus hyperboreus</u>
Glaucous-winged Gull	<u>Larus glaucescens</u>
Western Gull --	<u>Larus occidentalis</u>
Herring Gull	<u>Larus argentatus</u>
Thayer's Gull	<u>Larus thayeri</u>
California Gull	<u>Larus californicus</u>
Ring-billed Gull	<u>Larus delawarensis</u>
Mew Gull	<u>Larus canus</u>
Franklin's Gull	<u>Larus pipixcan</u>
Bonaparte's Gull	<u>Larus philadelphia</u>
Heerman's Gull	<u>Larus heermanni</u>
Common Tern	<u>Sterna hirundo</u>
Caspian Tern	<u>Hydroprogne caspia</u>
Common Murre	<u>Uria aalge</u>
Pigeon Guillemot	<u>Cepphus columba</u>
Marbled Murrelet	<u>Brachyramphus marmoratum</u>
Ancient Murrelet	<u>Synthliboramphus antiquum</u>
Rhinoceros Auklet	<u>Cerorhinca monocerata</u>
Tufted Puffin	<u>Lunda cirrhata</u>
Band-tailed Pigeon	<u>Columba fasciata</u>
Rock Dove	<u>Columba livia</u>
Mourning Dove	<u>Zenaidura macroura</u>
Barn Owl	<u>Tyto alba</u>
Screech Owl	<u>Otus asio</u>
Great Horned Owl	<u>Bubo virginianus</u>
Snowy Owl	<u>Nyctea scandia</u>
Pygmy Owl	<u>Glaucidium gnoma</u>

<u>Common Name</u>	<u>Scientific Name</u>
Barred Owl	<u>Strix varia</u>
Long-eared Owl	<u>Asio otus</u>
Short-eared Owl	<u>Asio flammeus</u>
Saw-whet Owl	<u>Aegolius acadicus</u>
Common Nighthawk	<u>Chordeiles minor</u>
Black Swift	<u>Cypseloides niger</u>
Vaux's Swift —	<u>Chaetura vauxi</u> -
Rufous Hummingbird	<u>Selasphorus rufus</u>
Belted Kingfisher	<u>Megaceryle alcyon</u>
Common Flicker— ==-==--==--	<u>Colaptes auratus</u>
Pileated Woodpecker	<u>Dryocopus pileatus</u>
Lewis' Woodpecker	<u>Asyndesmus lewis</u>
Yellow-bellied Sapsucker	<u>Sphyrapicus varius</u>
Hairy Woodpecker	<u>Dendrocopos villosus</u>
Downy Woodpecker	<u>Dendrocopos pubescens</u>
Eastern Kingbird	<u>Tyrannus tyrannus</u>
Western Kingbird	<u>Tyrannus verticalis</u>
Willow Flycatcher	<u>Empidonax traillii</u>
Hammond's Flycatcher	<u>Empidonax hammondi</u>
Western Flycatcher	<u>Empidonax difficilis</u>
Western Wood Pewee	<u>Contopus sordidulus</u>
Olive-sided Flycatcher	<u>Nuttallornix borealis</u>
Horned Lark	<u>Eremophila alpestris</u>
Violet-green Swallow	<u>Tachycineta thalassina</u>
Tree Swallow	<u>Iridoprocne bicolor</u>
Bank Swallow	<u>Riparia riparia</u>
Rough-winged Swallow	<u>Stelgidopteryx ruficollis</u>
Barn Swallow	<u>Hirundo rustica</u> ^ "
Cliff Swallow	<u>Petrochelidon pyrrhonota</u>
Purple Martin	<u>Progne subis</u>
Gray Jay	<u>Perisoreus canadensis</u>
Steller's Jay	<u>Cyanacitta stelleri</u>
Common Raven	<u>Corvus corax</u>
Common Crow	<u>Corvus brachyrhynchos</u>
Clark's Nutcracker	<u>Nucifraga columbiana</u>
Black-capped Chickadee	<u>Parus atricapillus</u>
Mountain Chickadee	<u>Parus gambeli</u>
Chestnut-backed Chickadee	<u>Parus rufescens</u>
Bushtit	<u>Psaltiriparus minimus</u>
Red-breasted Nuthatch	<u>Sitta canadensis</u>
Brown Creeper	<u>Certhia familiaris</u>
Dipper	<u>Cinclus mexicanus</u>
House Wren	<u>Troglodytes aedon</u>
Winter Wren	<u>Troglodytes troglodytes</u>
Bewick's Wren	<u>Thryomanes bewickii</u>
Long-Billed Marsh Wren	<u>Telmatodytes palustris</u>

<u>Common Name</u>	<u>Scientific Name</u>
Mockingbird	<u>Mimus polyglottos</u>
American Robin	<u>Turdus migratorius</u>
Varied Thrush	<u>Ixoreus naevius</u>
Hermit Thrush	<u>Hylocichla guttata</u>
Swainson's Thrush	<u>Catharus ustulata</u>
Mountain Bluebird	<u>Sialia currucoides</u>
Townsend's Solitaire	<u>Myadestes townsendi</u>
Water Pipit	<u>Anthus spinoletta</u>
Cedar Waxwing	<u>Bombycilla cedrorum</u>
Golden-crowned Kinglet	<u>Regulus satrapa</u>
Ruby-crowned Kinglet	<u>Regulus calendula</u>
Northern Shrike	<u>Lanius excubitor</u>
Starling	<u>Sturnus vulgaris</u>
Hutton's Vireo	<u>Vireo huttoni</u>
Solitary Vireo	<u>Vireo solitarius</u>
Red-eyed Vireo	<u>Vireo olivaceus</u>
Warbling Vireo	<u>Vireo gilvus</u>
Orange-crowned Warbler	<u>Dendroica townsendi</u>
Nashville Warbler	<u>Vermivora ruficapilla</u>
Yellow Warbler	<u>Dendroica petchia</u>
Yellow-rumped Warbler	<u>Dendroica coronata</u>
Black-throated Gray Warbler	<u>Dendroica nigrescens</u>
Townsend's Warbler	<u>Dendroica townsendi</u>
MacGillivray's Warbler	<u>Cporornis tolmiei</u>
Common Yellow-throat	<u>Geothlypis trichas</u>
Wilson's Warbler	<u>Wilsonia pusilla</u>
House Sparrow	<u>Passer domesticus</u>
Western Meadowlark	<u>Sturnella neglecta</u>
Yellow-headed Blackbird	<u>Xanthocephalus Xanthocephalus</u>
Red-winged Blackbird	<u>Agelaius phoenicius</u>
Northern Oriole	<u>Icterus galbula</u>
Brewer's Blackbird	<u>Euphagus cyanocephalus</u>
Brown-headed Cowbird	<u>Molothrus ater</u>
Western Tanager	<u>Piranga ludoviciana</u>
Black-headed Grosbeak	<u>Pheucticus melanocephalus</u>
Lazuli Bunting	<u>Passerina amoena</u>
Evening Grosbeak	<u>Hesperiphona vespertina</u>
Purple Finch	<u>Carpodacus purpureus</u>
House Finch	<u>Carpodacus mexicanus</u>
Pine Grosbeak	<u>Pinicola enucleator</u>
Gray-crowned Rosy Finch	<u>Leucosticte tephrocotis</u>
Pine Siskin	<u>Spinus pinus</u>
American Goldfinch	<u>Spinus tristis</u>
Red Crossbill	<u>Loxia curvirostra</u>

Common NameScientific Name

Rufous-sided Towhee	<u>Pipilo erythrophthalmus</u>
Savannah Sparrow - - -	<u>Passerculus sandwichensis</u>
Dark-eye Junco	<u>Junco hyemalis</u>
Tree Sparrow	<u>Spizella arborea</u>
Chipping Sparrow - - -	<u>Spizella passerina</u>
Brewer's Sparrow	<u>Spizella pallida</u>
Harris' Sparrow - - - - -	<u>Zonotrichia querula</u> - - - - -
White-crowned Sparrow - - -	<u>Zonotrichia leucophrys</u>
Golden-crowned Sparrow - - -	<u>Zonotrichia atricapilla</u>
White-throated Sparrow - - - - -	<u>Zonotrichia albicollis</u> - - - - -
Fox Sparrow - - - - -	<u>Passerella iliaca</u>
Lincoln's Sparrow	<u>Melospiza lincolni</u> - -
Swamp Sparrow	<u>Melospiza georgiana</u>
Song Sparrow	<u>Melospiza melodia</u>
Lapland Longspur	<u>Calcarius lapponicus</u>
Snow Bunting	<u>Plectrophenax nivalis</u>

<u>Common Name</u>	<u>Scientific Name</u>
Bufflehead	<u>Bucephala albeola</u> -
Oldsquaw	<u>Clangula hyemalis</u>
Harlequin Duck	<u>Histrionicus histrionicus</u>
White-winged Scoter	<u>Melanitta deglandi</u>
Surf Scoter	<u>Melanitta perspicillata</u>
Black Scoter	<u>Melanitta nigra</u>
Ruddy Duck	<u>Oxyura jamaicensis</u>
Hooded Merganser	<u>Lophodytes cucullatus</u>
Common Merganser	<u>Mergus merganser</u>
Red-breasted Merganser	<u>Mergus serrator</u> ..
Turkey Vulture - - -	<u>Cathartes aura</u>
Goshawk	<u>Accipiter gentilis</u>
Sharp-shinned Hawk	<u>Accipiter striatus</u>
Cooper's Hawk	<u>Accipiter cooperii</u>
Red-tailed Hawk	<u>Buteo jamaicensis</u>
Swanson's Hawk	<u>Buteo swainsoni</u>
Rough-legged Hawk	<u>Buteo lagopus</u>
Bald Eagle	<u>Haliaeetus leucocephalus</u>
Marsh Hawk	<u>Circus cyaneus</u>
Osprey	<u>Pandion haliaetus</u>
Gyr Falcon -	<u>Falco rusticolus</u>
Prairie Falcon	<u>Falco mexicanus</u>
Peregrine Falcon	<u>Falco peregrinus</u>
Merlin	<u>Falco columbarius</u>
American Kestrel	<u>Falco sparverius</u>
Blue Grouse	<u>Dendragapus obscurus</u>
Ruffed Grouse	<u>Bonasa umbellus</u>
California Quail	<u>Lophortyx californicus</u>
Ring-necked Pheasant	<u>Phasianus colchicus</u>
Sandhill Crane	<u>Grus canadensis</u>
Virginia Rail	<u>Rallus limicola</u>
Sora,	<u>Porzana carolina</u>
American Coot	<u>Fulica americana</u>
Black Oystercatcher	<u>Haematopus bachmani</u>
Semipalmated Plover	<u>Charadrius semipalmatus</u>
Killdeer	<u>Charadrius vociferus</u> :
American Golden Plover	<u>Pluvialis dominica</u>
Black-bellied Plover	<u>Pluvialis squatarola</u>
Surfbird -	<u>Aphriza virgata</u>
Ruddy Turnstone	<u>Arenaria interpres</u>
Black Turnstone	<u>Arenaria melanocephala</u>
Common Snipe	<u>Capella gallinago</u>
Long-billed Curlew	<u>Numenius americanus</u>
Wimbrel	<u>Numenius phaeopus</u>
Spotted Sandpiper	<u>Actitis macularia</u>
Solitary Sandpipe	<u>Tringa solitaria</u>
Wandering Tattler	<u>Heteroscelus incanus</u>
Greater Yellowlegs	<u>Tringa melanoleuca</u>

<u>Common Name</u>	<u>Scientific Name</u>
Common Loon	<u>Gavia immer</u>
Yellow-billed Loon	<u>Gavia adamsii</u>
Arctic Loon	<u>Gavia arctica</u>
Red-throated Loon	<u>Gavia stellata</u>
Red-necked Grebe	<u>Podiceps grisegena</u>
Horned Grebe	<u>Podiceps auritus</u>
Eared Grebe	<u>Podiceps nigricollis</u>
Western Grebe	<u>Aechmophorus occidentalis</u>
Pied-billed Grebe	<u>Podilymbus podiceps</u>
Double-crested Cormorant	<u>Phalacrocorax auritus</u>
Brandt's Cormorant	<u>Phalacrocorax penicillatus</u>
Pelagic Cormorant	<u>Phalacrocorax pelagicus</u>
Great Blue Heron	<u>Ardea herodias</u>
Green Heron	<u>Butorides virescens</u>
Great Egret	<u>Casmerodius albus</u>
Black-crowned Night Heron	<u>Nycticorax nycticorax</u>
American Bittern	<u>Botaurus lentiginosus</u>
Whistling Swan	<u>Olor columbianus</u>
Trumpeter Swan	<u>Olor buccinator</u>
Canada Goose	<u>Branta canadensis</u>
Black Brant	<u>Branta bernicla</u>
White-fronted Goose	<u>Anser albifrons</u>
Snow Goose	<u>Chen caerulescens</u>
Mallard	<u>Anas platyrhynchos</u>
Gadwall	<u>Anas strepera</u>
Pintail	<u>Anas acuta</u>
Green-winged Teal	<u>Anas crecca</u>
Blue-Winged Teal	<u>Anas discors</u>
Cinnamon Teal	<u>Anas cyanoptera</u>
European Wigeon	<u>Anas penelope</u>
American Wigeon	<u>Anas americana</u>
Northern Shoveler	<u>Anas clypeata</u>
Wood Duck	<u>Aix sponsa</u>
Redhead	<u>Aythya americana</u>
Ring-necked Duck	<u>Aythya collaris</u>
Canvasback	<u>Aythya valisineria</u>
Greater Scaup	<u>Aythya marila</u>
Lesser Scaup	<u>Aythya affinis</u>
Common Goldeneye	<u>Bucephala clangula</u>
Barrow's Goldeneye	<u>Bucephala islandica</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Family Pholidae	Penpoint gunnel	<u>Apodichthys flavidus</u>
	Crescent gunnel	<u>Pholis laeta</u>
	Saddleback gunnel	<u>Pholis ornata</u>
Family Ammodytidae	Pacific sand lance	<u>Ammodytes hexapterus</u>
Order Scorpaeniformes		
Family Scorpaenidae	Yellow rockfish	<u>Sebastes flavidus</u>
	Sharpchin rockfish	<u>Sebastes zacentrus</u>
Family Hexagrammidae	Lingcod	<u>Ophiodon elongatus</u>
Family Cottidae	Padded sculpin	<u>Artedius fenestralis</u>
	Silverspotted sculpin	<u>Blepsias cirrhosus</u>
	Buffalo sculpin	<u>Enophrys bison</u>
	Soft sculpin	<u>Gilbertidia sigalutes</u>
	Pacific staghorn sculpin	<u>Leptocottus armatus</u>
	Great sculpin	<u>Myoxocephalus</u>
		<u>polyacanthocephalus</u>
	Sailfin sculpin	<u>Nautichthys oculofasciatus</u>
	Tadpole sculpin	<u>Psychrolutes paradoxus</u>
	Grunt sculpin	<u>Phamphocottus richardsoni</u>
	Ribbed sculpin	<u>Triglops pinceli</u>
Family Agonidae	Sturgeon poacher	<u>Azonus acipenserinus</u>
	Smooth alligator fish	<u>Anoplagonus inermis</u>
	Tubenose poacher	<u>Pallasina barbata aix</u>
Family Cyclopteridae	Pacific spiny lumpsucker	<u>Eumicrotremus orbis</u>
	Spotted snailfish	<u>Liparis callvodon</u>
	Tidepool snailfish	<u>Liparis florae</u>
Order Pleuronectiformes		
Family Bothidae	Speckled sanddab	<u>Citharichthys stigmaeus</u>
Family Pleuronectidae	Arrowtooth flounder	<u>Atheresthes stomias</u>
	Rock sole	<u>Lepidopsetta bilineata</u>
	Slender sole	<u>Lyopsetta exilis</u>
	Dover sole	<u>Microstomus pacificus</u>
	English sole	<u>Parophrys vetulus</u>
	Starry flounder	<u>Platichthys stellatus</u>
	Sand sole	<u>Psettichthys melanostictus</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Class Chondrichthyes		
Subclass Elasmobranchii		
Order Squaliformes		
Family Squalidae	Spiny dogfish	<u>Squalus acanthias</u>
Order Rajiformes	Big Skate	<u>Raja binoculata</u>
Family Rajidae		
Subclass Holocephali		
Order Chimaeriformes		
Family Chimaeridae	Ratfish	<u>Hydrolagus colliei</u>
Class Osteichthyes		
Order Clupeiformes		
Family Clupeidae	Pacific herring	<u>Clupea harengus pallasii</u>
Family Engraulidae	Northern anchovy	<u>Engraulis mordax mordax</u>
Order Salmoniformes	Pink salmon	<u>Oncorhynchus gorbuscha</u>
Family Salmonidae	Chum salmon	<u>Oncorhynchus keta</u>
	Coho salmon	<u>Oncorhynchus kisutch</u>
	Sockeye salmon	<u>Oncorhynchus nerka</u>
	Chinook salmon	<u>Oncorhynchus tshawytscha</u>
	Coastal cutthroat trout	<u>Salmo clarki clarki</u>
	Dolly Varden	<u>Salvelinus malma</u>
Family Osmeridae	Surf smelt	<u>Hypomesus pretiosus pretiosus</u>
	Longfin smelt	<u>Spirinchus thaleichthys</u>
Order Myctophiformes		
Family Myctophidae	Northern lampfish	<u>Stenobrachius leucopsarus</u>
Order Gobiesociformes		
Family Gobiesocidae	Northern clingfish	<u>Gobiesox maeandricus</u>
Order Gadiformes		
Family Gadidae	Pacific tomcod	<u>Microgadus proximus</u>
Family Ophidiidae	Red brotula	<u>Brosomphycis marginata</u>
Family Zoarcidae	Blackbelly eelpout	<u>Lycodopsis pacifica</u>
Order Gasterosteiformes		
Family Gasterosteidae	Threespine stickleback	<u>Gasterosteus aculeatus</u>
Family Syngnathidae	Bay pipefish	<u>Syngnathus griseolineatus</u>
Order Perciformes	Shiner perch	<u>Cymatogaster aggregata</u>
Family Embiotocidae		
Family Trichodontidae	Pacific sandfish	<u>Trichodon trichodon</u>
Family Stichaeidae	Snake prickleback	<u>Lumpenus sagitta</u>
	Bluebarred prickleback	<u>Plectobranthus evides</u>
	Black prickleback	<u>Xiphister atropurpureus</u>

¹ Compiled from Sylvester and Clogston 1958, DeLacey and Miller 1972, Miller et al. unpublished data.

² Nomenclature after Hart 1973.

	<u>Common Name</u>	<u>Scientific Name</u>
Family Pholidae	Penpoint gunnel	<u>Apodichthys flavidus</u>
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	Sharpchin rockfish	<u>Sebastes zacentrus</u>
Family Hexagrammidae	Lingcod	<u>Ophiodon elongatus</u>
Family Cottidae	Padded sculpin	<u>Artedius fenestralis</u>
	Silverspotted sculpin	<u>Blepsias cirrhosus</u>
	Buffalo sculpin	<u>Enophrys bison</u>
	Soft sculpin	<u>Gilbertidia sigalutes</u>
	Pacific staghorn sculpin	<u>Leptocottus armatus</u>
	Great sculpin	<u>Myoxocephalus</u> <u>polyacanthocephalus</u>
	Sailfin sculpin	<u>Nautichthys oculo-fasciatus</u>
	Tadpole sculpin	<u>Psychrolutes paradoxus</u>
	Grunt sculpin	<u>Phanphocottus richardsoni</u>
	Ribbed sculpin	<u>Triglops pingeli</u>
Family Agonidae	Sturgeon poacher	<u>Agonus acipenserinus</u>
	Smooth alligator fish	<u>Anoplagonus inermis</u>
	Tubenose poacher	<u>Pallasina barbata aix</u>
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	Spotted snailfish	<u>Liparis calliodon</u>
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Family Pleuronectidae	Arrowtooth flounder	<u>Atheresthes stomias</u>
	Rock sole	<u>Lepidopsetta bilineata</u>
	Slender sole	<u>Lyopsetta exilis</u>
	Dover sole	<u>Microstomus pacificus</u>
	English sole	<u>Parophrys vetulus</u>
	Starry flounder	<u>Platichthys stellatus</u>
	Sand sole	<u>Psettichthys melanostictus</u>

Common Name

Scientific Name

Phylum Chordata

Subphylum Urochordata

Class Larvacea

Class Ascidiacea

	<u>Oikopleura</u> sp.
Hairy sea squirt	<u>Boltenia villosa</u>
Broad base sea squirt	<u>Cnemidocarpa finmarkiensis</u>
Warty sea squirt	<u>Pyura haustor</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Suborder Reptantia		
Section Astacura		
Superfamily Thalassinoidea	Ghost shrimp	<u>Callinassa californiensis</u>
	Mud shrimp	<u>Upogebia pugettensis</u>
Section Anomura		
Superfamily Galatheoidea	Porcelain crab	<u>Petrolisthes eriomerus</u>
Superfamily Paguroidea	Hermit crab	<u>Pagurus granosimanus</u>
	Hairy hermit crab	<u>Pagurus hirsutiusculus</u>
		<u>Pagurus kennerlyi</u>
Section Brachyura		
Subsection Brachygnatha		
Infrasubsection Oxyrhyncha	Decorator crab	<u>Oregonia gracilis</u>
	Spider crab	<u>Pugettis gracilis</u>
	Kelp crab	<u>Pugettia producta</u>
Infrasubsection Brachyrhyncha		
	Dungeness crab	<u>Cancer magister</u>
	Red rock crab	<u>Cancer productus</u>
	Purple shore crab	<u>Hemigrapsus nudus</u>
	Green shore crab	<u>Hemigrapsus oregonensis</u>
		<u>Pinnixa occidentalis</u>
		<u>Pinnixa schmitti</u>
	Burrow crab	<u>Pinnixa tubicola</u>
	Helmet crab	<u>Telmessus cheiragonus</u>
Phylum Bryozoa		Unidentified sp.
Phylum Brachiopoda	Lamp shell	<u>Terebratalia transversa</u>
Phylum Echinodermata		
Class Ophiuroidea		
		<u>Amphiodia urtica</u>
		<u>Diamphiodia periercta</u>
		Unidentified sp.
Class Asteroidea	Blood star	<u>Henricia leviuscula</u>
	Six-rayed sea star	<u>Leptasterias hexactis</u>
		<u>Pisaster ochraceus</u>
	Sunflower star	<u>Pycnopodia helianthoides</u>
Class Echinoidea	Green sea urchin	<u>Strongylocentrotus</u>
		<u>droebachiensis</u>
Class Holothuroidea	Red sea cucumber	<u>Cucumaria miniata</u>
	White sea cucumber	<u>Eupentacta quinguesemita</u>
		<u>Leptosynapta</u> sp.
Phylum Chaetognatha	Arrow worm	<u>Sagitta elegans</u>

Common Name

Scientific Name

Olive green isopod

Idotea vosnesenskii

Snyidotea angulata

Snyidotea bicuspada

Paranthura elegans

Gnorimosphaeroma oregonens

Suborder Anthuridea

Suborder Flabellifera

Order Amphipoda

Suborder Hyperiidea

Suborder Gammaridea

Oregon pill bug

Unidentified sp.

Ampelisca pugettica

Ampithoe lacertosa

Ampithoe valida

Anisogammarus confervicolu

Anisogammarus pugettensis

Aoroides columbiae

Corophium sp.

Hyale frequens

Ischrocerus anquipes

Melita dentata

Beach hopper

Orchestia transkiana

Orchomene sp.

Parallorchestes ochotensis

Paraphoxus sp.

Photis brevipes

Photis sp.

Pontogenia sp.

Protomedia sp.

Corophid

Unidentified sp.

Gammarid

Unidentified sp.

Lysianassid

Unidentified sp.

Phoxocephalid

Unidentified spp.

Suborder Caprellidea

Skelton shrimp

Caprella leviuscula

Metacaprella anomala

Metacaprella kennerlyi

Unidentified sp.

Superorder

Order Decapoda

Suborder Natantia

Section Caridea

Family Crangonidae

Gray shrimp

Crangon nigricanda

Sclerocrangon alata

Unidentified sp.

Family Hippolytidae

	<u>Common Name</u>	<u>Scientific Name</u>
Family Terebellidae		<u>Amphitrite</u> <u>cirrata</u> <u>Eupolytmia</u> <u>heterobranchia</u> <u>Pista</u> sp. <u>Polycirrus</u> <u>kerquelenensis</u> Unidentified sp.
Class Oligochaeta		
Phylum Priapulida		<u>Priapulid</u> <u>caudatus</u>
Phylum Sipuncula		<u>Golfingia</u> <u>pugettensis</u> <u>Siphonoscma</u> <u>ingens</u> Unidentified sp.
Phylum Arthropoda		
Class Crustacea		
Subclass Branchiopoda		
Order Cladocera		<u>Podon</u> sp. Unidentified sp.
Subclass Ostracoda		<u>Microsetella</u> <u>norvegica</u>
Subclass Copepoda		<u>Acartia</u> <u>clausi</u> <u>Calanus</u> <u>finmarchicus</u> <u>Microcalanus</u> <u>pusillus</u> <u>Pseudocalanus</u> <u>minutus</u> <u>Harpacticus</u> spp. <u>Corycaeus</u> <u>affinis</u> Unidentified sp.
Order Calanoida		
Order Harpacticoida		
Order Cyclopoida		
Order Monstrilloida		
Subclass Cirripedia		
Order Thoracica	Horse barnacle	<u>Balanus</u> <u>cariosus</u> <u>Balanus</u> <u>crenatus</u> <u>Balanus</u> <u>glandula</u>
	Acorn barnacle	
Subclass Malacostraca		
Superorder Phyllocarida		
Order Leptostraca		<u>Nebalia</u> sp.
Superorder Peracarida		
Order Cumacea		<u>Diastylis</u> sp. <u>Oxyurostylis</u> sp. <u>Leptochelia</u> <u>savignyi</u> <u>Leptochelia</u> sp. <u>Pancolus</u> <u>californiensis</u> Unidentified sp.
Order Tanaidacea		
Order Isopoda		
Suborder Valvifera	Eelgrass isopod	<u>Idotea</u> <u>aculeata</u> <u>Idotea</u> <u>fewkesi</u> <u>Idotea</u> <u>rescata</u> <u>Idotea</u> <u>rufescens</u>

	<u>Common Name</u>	<u>Scientific Name</u>
Order Marsupiala		
Family Didelphidae	Virginia opossum	<u>Didelphis virginiana</u>
Order Insectivora		
Family Soricidae	Vagrant shrew	<u>Sorex vagrans</u>
Order Lagomorpha		
Family Leporidae	Eastern cottontail	<u>Sylvilagus floridanus</u>
Order Rodentia		
Family Sciuridae	Douglas' squirrel	<u>Tamiasciurus douglasii</u>
Family Castoridae	Beaver	<u>Castor canadensis</u>
Family Cricetidae		
Subfamily Microtinae	Townsend's vole	<u>Microtus townsendii</u>
	Muskrat	<u>Ondatra zibethicus</u>
Order Carnivora		
Family Canidae	Coyote	<u>Canis latrans</u>
	Red fox	<u>Vulpes vulpes</u>
Family Procyonidae	Raccoon	<u>Procyon lotor</u>
Family Mustelidae	Striped skunk	<u>Mephitis mephitis</u>
	River otter	<u>Lutra canadensis</u>
Order Pinnipedia		
Family Phocidae	Harbor seal	<u>Phoco vitulina</u>
Order Artiodactyla		
Family Cervidae	Black-tailed deer	<u>Odocoileus hemionus columbianus</u>

¹ Compiled from observations of tracks and droppings, mammal sightings and conversations with local people at Padilla Bay.

² Nomenclature after Jones et al. 1975.

APPENDIX IX

Regulations and Policies Related to Padilla Bay

Chapter 90.58 RCW

SHORELINE MANAGEMENT ACT OF 1971

Sections			
90.58.010	Short title.	90.58.290	Restrictions as affecting fair market value of property.
90.58.020	Legislative findings—State policy enunciated—Use preference.	90.58.300	Department as regulating state agency—Special authority.
90.58.030	Definitions and concepts.	90.58.310	Designation of shorelines of state-wide significance by legislature—Recommendation by director, procedure.
90.58.040	Program applicable to shorelines of the state.	90.58.320	Height limitation respecting permits.
90.58.050	Program as cooperative between local government and state—Responsibilities differentiated.	90.58.330	Study of shorelines of cities and towns submitted to legislature—Scope.
90.58.060	Timetable for adoption of initial guidelines—Public hearings, notice of.	90.58.340	Use policies for land adjacent to shorelines, development of.
90.58.070	Local governments to submit letters of intent—Department to act upon failure of local government.	90.58.350	Nonapplication to treaty rights.
90.58.080	Timetable for local governments to complete shoreline inventories and master programs.	90.58.360	Existing requirements for permits, certificates, etc., not obviated.
90.58.090	Approval of master program or segments thereof, when—Departmental alternatives when shorelines of state-wide significance—Later adoption of master program supersedes departmental program.	90.58.900	Liberal construction—1971 ex.s. c 286.
90.58.100	Programs as constituting use regulations—Duties when preparing programs and amendments thereto—Program contents.	90.58.910	Severability—1971 ex.s. c 286.
90.58.110	Development of program within two or more adjacent local government jurisdictions—Development of program in segments, when.	90.58.920	Effective date—1971 ex.s. c 286.
90.58.120	Adoption of rules, programs, etc., subject to RCW 34.04.025—Public hearings, notice of—Public inspection after approval or adoption.	90.58.930	Referendum to the people—1971 ex.s. c 286—Determining if act continues in force and effect.
90.58.130	Involvement of all persons and entities having interest, means.		Marine oil pollution—Baseline study program: RCW 43.21A.405–43.21A.420.
90.58.140	Development permits—Grounds for granting—Administration by local government, conditions—Applications—Notices—Rescission—When permits not required—Approval when permit for variance or conditional use.		
90.58.145	Substantial development permit—Structures at temporary ferry terminals—Hood Canal bridge—Removal of structures.		
90.58.150	Selective commercial timber cutting, when.		
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90.58.170	Shorelines hearings board—Established—Members—Chairman—Quorum for decision—Expenses of members.		
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90.58.180	Appeals from granting, denying or rescinding permits, procedure—Board to act, when—Local government appeals to board—Grounds for declaring master program invalid—Appeals to court, procedure.		
90.58.190	Review and adjustments to master programs.		
90.58.200	Rules and regulations.		
90.58.210	Court actions to insure against conflicting uses and to enforce.		
90.58.220	General penalty.		
90.58.230	Violators liable for damages resulting from violation—Attorney's fees and costs.		
90.58.240	Additional authority granted department and local governments.		
90.58.250	Department to cooperate with local governments—Grants for development of master programs.		
90.58.260	State to represent its interest before federal agencies, interstate agencies and courts.		
90.58.270	Nonapplication to certain structures, docks, developments, etc., placed in navigable waters—Nonapplication to certain rights of action, authority.		
90.58.280	Application to all state agencies, counties, public and municipal corporations.		

RCW 90.58.010 Short title. This chapter shall be known and may be cited as the "Shoreline Management Act of 1971". [1971 ex.s. c 286 § 1.]

RCW 90.58.020 Legislative findings—State policy enunciated—Use preference. The legislature finds that the shorelines of the state are among the most valuable and fragile of its natural resources and that there is great concern throughout the state relating to their utilization, protection, restoration, and preservation. In addition it finds that ever increasing pressures of additional uses are being placed on the shorelines necessitating increased coordination in the management and development of the shorelines of the state. The legislature further finds that much of the shorelines of the state and the uplands adjacent thereto are in private ownership; that unrestricted construction on the privately owned or publicly owned shorelines of the state is not in the best public interest; and therefore, coordinated planning is necessary in order to protect the public interest associated with the shorelines of the state while, at the same time, recognizing and protecting private property rights consistent with the public interest. There is, therefore, a clear and urgent demand for a planned, rational, and concerted effort, jointly performed by federal, state, and local governments, to prevent the inherent harm in an uncoordinated and piecemeal development of the state's shorelines.

It is the policy of the state to provide for the management of the shorelines of the state by planning for and fostering all reasonable and appropriate uses. This policy is designed to insure the development of these shorelines in a manner which, while allowing for limited reduction

of rights of the public in the navigable waters, will promote and enhance the public interest. This policy contemplates protecting against adverse effects to the public health, the land and its vegetation and wildlife, and the waters of the state and their aquatic life, while protecting generally public rights of navigation and corollary rights incidental thereto.

The legislature declares that the interest of all of the people shall be paramount in the management of shorelines of state-wide significance. The department, in adopting guidelines for shorelines of state-wide significance, and local government, in developing master programs for shorelines of state-wide significance, shall give preference to uses in the following order of preference which:

- (1) Recognize and protect the state-wide interest over local interest;
- (2) Preserve the natural character of the shoreline;
- (3) Result in long term over short term benefit;
- (4) Protect the resources and ecology of the shoreline;
- (5) Increase public access to publicly owned areas of the shorelines;
- (6) Increase recreational opportunities for the public in the shoreline;

(7) Provide for any other element as defined in RCW 90.58.100 deemed appropriate or necessary.

In the implementation of this policy the public's opportunity to enjoy the physical and aesthetic qualities of natural shorelines of the state shall be preserved to the greatest extent feasible consistent with the overall best interest of the state and the people generally. To this end uses shall be preferred which are consistent with control of pollution and prevention of damage to the natural environment, or are unique to or dependent upon use of the state's shoreline. Alterations of the natural condition of the shorelines of the state, in those limited instances when authorized, shall be given priority for single family residences, ports, shoreline recreational uses including but not limited to parks, marinas, piers, and other improvements facilitating public access to shorelines of the state, industrial and commercial developments which are particularly dependent on their location on or use of the shorelines of the state and other development that will provide an opportunity for substantial numbers of the people to enjoy the shorelines of the state.

Permitted uses in the shorelines of the state shall be designed and conducted in a manner to minimize, insofar as practical, any resultant damage to the ecology and environment of the shoreline area and any interference with the public's use of the water. [1971 ex.s. c 286 § 2.]

**Reviser's note: In subsection (7), a literal translation of the session law's reference "... section 11 of this 1971 act ..." would read "RCW 90.58.110". The above reference to "RCW 90.58.100" which codifies section 10 of this act is believed proper in that (1) section 10 lists the elements includable within the master programs while section 11 neither defines nor mentions such elements, and (2) in the course of passage of the bill, section 7 was deleted causing old section 11 to be renumbered section 10, but the above reference was not amended in consonance with the renumbering.*

RCW 90.58.030 Definitions and concepts. As used in this chapter, unless the context otherwise requires, the following definitions and concepts apply:

(1) Administration:

- (a) "Department" means the department of ecology;
- (b) "Director" means the director of the department of ecology;
- (c) "Local government" means any county, incorporated city, or town which contains within its boundaries any lands or waters subject to this chapter;
- (d) "Person" means an individual, partnership, corporation, association, organization, cooperative, public or municipal corporation, or agency of the state or local governmental unit however designated;
- (e) "Hearing board" means the shoreline hearings board established by this chapter.

(2) Geographical:

- (a) "Extreme low tide" means the lowest line on the land reached by a receding tide;
- (b) "Ordinary high water mark" on all lakes, streams, and tidal water is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971 or as it may naturally change thereafter: *Provided*, That in any area where the ordinary high water mark cannot be found, the ordinary high water mark adjoining salt water shall be the line of mean higher high tide and the ordinary high water mark adjoining fresh water shall be the line of mean high water;

(c) "Shorelines of the state" are the total of all "shorelines" and "shorelines of state-wide significance" within the state;

(d) "Shorelines" means all of the water areas of the state, including reservoirs, and their associated wetlands, together with the lands underlying them; except (i) shorelines of state-wide significance; (ii) shorelines on segments of streams upstream of a point where the mean annual flow is twenty cubic feet per second or less and the wetlands associated with such upstream segments; and (iii) shorelines on lakes less than twenty acres in size and wetlands associated with such small lakes;

(e) "Shorelines of state-wide significance" means the following shorelines of the state:

(i) The area between the ordinary high water mark and the western boundary of the state from Cape Disappointment on the south to Cape Flattery on the north, including harbors, bays, estuaries, and inlets;

(ii) Those areas of Puget Sound and adjacent salt waters and the Strait of Juan de Fuca between the ordinary high water mark and the line of extreme low tide as follows:

(A) Nisqually Delta—from DeWolf Bight to Tatsolo Point,

(B) Birch Bay—from Point Whitehorn to Birch Point,

(C) Hood Canal—from Tala Point to Foulweather Bluff,

(D) Skagit Bay and adjacent area—from Brown Point to Yokeko Point, and

(E) Padilla Bay—from March Point to William Point;

(iii) Those areas of Puget Sound and the Strait of Juan de Fuca and adjacent salt waters north to the Canadian line and lying seaward from the line of extreme low tide;

(iv) Those lakes, whether natural, artificial or a combination thereof, with a surface acreage of one thousand acres or more measured at the ordinary high water mark;

(v) Those natural rivers or segments thereof as follows:

(A) Any west of the crest of the Cascade range downstream of a point where the mean annual flow is measured at one thousand cubic feet per second or more,

(B) Any east of the crest of the Cascade range downstream of a point where the annual flow is measured at two hundred cubic feet per second or more, or those portions of rivers east of the crest of the Cascade range downstream from the first three hundred square miles of drainage area, whichever is longer;

(vi) Those wetlands associated with (i), (ii), (iv), and (v) of this subsection (2)(c);

(f) "Wetlands" or "wetland areas" means those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous floodplain areas landward two hundred feet from such floodways; and all marshes, bogs, swamps, and river deltas associated with the streams, lakes, and tidal waters which are subject to the provisions of this chapter; the same to be designated as to location by the department of ecology: *Provided*, That any county or city may determine that portion of a one-hundred-year-flood plain to be included in its master program as long as such portion includes, as a minimum, the floodway and the adjacent land extending landward two hundred feet therefrom;

(g) "Floodway" means those portions of the area of a river valley lying streamward from the outer limits of a watercourse upon which flood waters are carried during periods of flooding that occur with reasonable regularity, although not necessarily annually, said floodway being identified, under normal condition, by changes in surface soil conditions or changes in types or quality of vegetative ground cover condition. The floodway shall not include those lands that can reasonably be expected to be protected from flood waters by flood control devices maintained by or maintained under license from the federal government, the state, or a political subdivision of the state.

(3) Procedural terms:

(a) "Guidelines" means those standards adopted to implement the policy of this chapter for regulation of use of the shorelines of the state prior to adoption of master programs. Such standards shall also provide criteria to local governments and the department in developing master programs;

(b) "Master program" shall mean the comprehensive use plan for a described area, and the use regulations

together with maps, diagrams, charts or other descriptive material and text, a statement of desired goals and standards developed in accordance with the policies enunciated in RCW 90.58.020;

(c) "State master program" is the cumulative total of all master programs approved or adopted by the department of ecology;

(d) "Development" means a use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel or minerals; bulkheading; driving of piling; placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to this chapter at any state of water level;

(e) "Substantial development" shall mean any development of which the total cost or fair market value exceeds one thousand dollars, or any development which materially interferes with the normal public use of the water or shorelines of the state; except that the following shall not be considered substantial developments for the purpose of this chapter:

(i) Normal maintenance or repair of existing structures or developments, including damage by accident, fire or elements;

(ii) Construction of the normal protective bulkhead common to single family residences;

(iii) Emergency construction necessary to protect property from damage by the elements;

(iv) Construction and practices normal or necessary for farming, irrigation, and ranching activities, including agricultural service roads and utilities on wetlands, and the construction and maintenance of irrigation structures including but not limited to head gates, pumping facilities, and irrigation channels: *Provided*, That a feedlot of any size, all processing plants, other activities of a commercial nature, alteration of the contour of the wetlands by leveling or filling other than that which results from normal cultivation, shall not be considered normal or necessary farming or ranching activities. A feedlot shall be an enclosure or facility used or capable of being used for feeding livestock hay, grain, silage, or other livestock feed, but shall not include land for growing crops or vegetation for livestock feeding and/or grazing, nor shall it include normal livestock wintering operations;

(v) Construction or modification of navigational aids such as channel markers and anchor buoys;

(vi) Construction on wetlands by an owner, lessee or contract purchaser of a single family residence for his own use or for the use of his family, which residence does not exceed a height of thirty-five feet above average grade level and which meets all requirements of the state agency or local government having jurisdiction thereof, other than requirements imposed pursuant to this chapter;

(vii) Construction of a dock, designed for pleasure craft only, for the private noncommercial use of the owner, lessee or contract purchaser of a single family residence, the cost of which does not exceed two thousand five hundred dollars;

(viii) Operation, maintenance, or construction of canals, waterways, drains, reservoirs, or other facilities

that now exist or are hereafter created or developed as a part of an irrigation system for the primary purpose of making use of system waters, including return flow and artificially stored ground water for the irrigation of lands;

(ix) The marking of property lines or corners on state owned lands, when such marking does not significantly interfere with normal public use of the surface of the water;

(x) Operation and maintenance of any system of dikes, ditches, drains, or other facilities existing on September 8, 1975, which were created, developed, or utilized primarily as a part of an agricultural drainage or diking system;

(xi) Any action commenced prior to February 13, 1981, pertaining to the restoration of interim transportation services as may be necessary as a consequence of the destruction of the Hood Canal bridge, including, but not limited to, improvements to highways, development of park and ride facilities, and development of ferry terminal facilities until a new or reconstructed Hood Canal bridge is open to traffic. [1979 1st ex.s. c 84 § 3; 1975 1st ex.s. c 182 § 1; 1973 1st ex.s. c 203 § 1; 1971 ex.s. c 286 § 3.]

Intent—1979 1st ex.s. c 84: See note following RCW 43.21C.032.

RCW 90.58.040 Program applicable to shorelines of the state. The shoreline management program of this chapter shall apply to the shorelines of the state as defined in this chapter. [1971 ex.s. c 286 § 4.]

RCW 90.58.050 Program as cooperative between local government and state—Responsibilities differentiated. This chapter establishes a cooperative program of shoreline management between local government and the state. Local government shall have the primary responsibility for initiating and administering the regulatory program of this chapter. The department shall act primarily in a supportive and review capacity with primary emphasis on insuring compliance with the policy and provisions of this chapter. [1971 ex.s. c 286 § 5.]

RCW 90.58.060 Timetable for adoption of initial guidelines—Public hearings, notice of. (1) Within one hundred twenty days from June 1, 1971, the department shall submit to local governments proposed guidelines consistent with RCW 90.58.020 for:

(a) Development of master programs for regulation of the uses of shorelines; and

(b) Development of master programs for regulation of the uses of shorelines of state-wide significance.

(2) Within sixty days from receipt of such proposed guidelines, local governments shall submit to the department in writing proposed changes, if any, and comments upon the proposed guidelines.

(3) Thereafter and within one hundred twenty days from the submission of such proposed guidelines to local

governments, the department, after review and consideration of the comments and suggestions submitted to it, shall resubmit final proposed guidelines.

(4) Within sixty days thereafter public hearings shall be held by the department in Olympia and Spokane, at which interested public and private parties shall have the opportunity to present statements and views on the proposed guidelines. Notice of such hearings shall be published at least once in each of the three weeks immediately preceding the hearing in one or more newspapers of general circulation in each county of the state.

(5) Within ninety days following such public hearings, the department at a public hearing to be held in Olympia shall adopt guidelines. [1971 ex.s. c 286 § 6.]

RCW 90.58.070 Local governments to submit letters of intent—Department to act upon failure of local government. (1) Local governments are directed with regard to shorelines of the state in their various jurisdictions to submit to the director of the department, within six months from June 1, 1971, letters stating that they propose to complete an inventory and develop master programs for these shorelines as provided for in RCW 90.58.080.

(2) If any local government fails to submit a letter as provided in subsection (1) of this section, or fails to adopt a master program for the shorelines of the state within its jurisdiction in accordance with the time schedule provided in this chapter, the department shall carry out the requirements of RCW 90.58.080 and adopt a master program for the shorelines of the state within the jurisdiction of the local government. [1971 ex.s. c 286 § 7.]

RCW 90.58.080 Timetable for local governments to complete shoreline inventories and master programs. Local governments are directed with regard to shorelines of the state within their various jurisdictions as follows:

(1) To complete within eighteen months after June 1, 1971, a comprehensive inventory of such shorelines. Such inventory shall include but not be limited to the general ownership patterns of the lands located therein in terms of public and private ownership, a survey of the general natural characteristics thereof, present uses conducted therein and initial projected uses thereof;

(2) To develop, within twenty-four months after the adoption of guidelines as provided in RCW 90.58.060, a master program for regulation of uses of the shorelines of the state consistent with the guidelines adopted. [1974 ex.s. c 61 § 1; 1971 ex.s. c 286 § 8.]

RCW 90.58.090 Approval of master program or segments thereof, when—Departmental alternatives when shorelines of state-wide significance—Later adoption of master program supersedes departmental program. Master programs or segments thereof shall become effective when adopted or approved by the department as appropriate. Within the time period provided in

RCW 90.58.080, each local government shall have submitted a master program, either totally or by segments, for all shorelines of the state within its jurisdiction to the department for review and approval.

(1) As to those segments of the master program relating to shorelines, they shall be approved by the department unless it determines that the submitted segments are not consistent with the policy of RCW 90.58.020 and the applicable guidelines. If approval is denied, the department shall state within ninety days from the date of submission in detail the precise facts upon which that decision is based, and shall submit to the local government suggested modifications to the program to make it consistent with said policy and guidelines. The local government shall have ninety days after it receives recommendations from the department to make modifications designed to eliminate the inconsistencies and to resubmit the program to the department for approval. Any resubmitted program shall take effect when and in such form and content as is approved by the department.

(2) As to those segments of the master program relating to shorelines of state-wide significance the department shall have full authority following review and evaluation of the submission by local government to develop and adopt an alternative to the local government's proposal if in the department's opinion the program submitted does not provide the optimum implementation of the policy of this chapter to satisfy the state-wide interest. If the submission by local government is not approved, the department shall suggest modifications to the local government within ninety days from receipt of the submission. The local government shall have ninety days after it receives said modifications to consider the same and resubmit a master program to the department. Thereafter, the department shall adopt the resubmitted program or, if the department determines that said program does not provide for optimum implementation, it may develop and adopt an alternative as hereinbefore provided.

(3) In the event a local government has not complied with the requirements of RCW 90.58.070 it may thereafter upon written notice to the department elect to adopt a master program for the shorelines within its jurisdiction, in which event it shall comply with the provisions established by this chapter for the adoption of a master program for such shorelines.

Upon approval of such master program by the department it shall supersede such master program as may have been adopted by the department for such shorelines. [1971 ex.s. c 286 § 9.]

RCW 90.58.100 Programs as constituting use regulations—Duties when preparing programs and amendments thereto—Program contents. (1) The master programs provided for in this chapter, when adopted and approved by the department, as appropriate, shall constitute use regulations for the various shorelines of the state. In preparing the master programs, and any amendments thereto, the department and local governments shall to the extent feasible:

(a) Utilize a systematic interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts;

(b) Consult with and obtain the comments of any federal, state, regional, or local agency having any special expertise with respect to any environmental impact;

(c) Consider all plans, studies, surveys, inventories, and systems of classification made or being made by federal, state, regional, or local agencies, by private individuals, or by organizations dealing with pertinent shorelines of the state;

(d) Conduct or support such further research, studies, surveys, and interviews as are deemed necessary;

(e) Utilize all available information regarding hydrology, geography, topography, ecology, economics, and other pertinent data;

(f) Employ, when feasible, all appropriate, modern scientific data processing and computer techniques to store, index, analyze, and manage the information gathered.

(2) The master programs shall include, when appropriate, the following:

(a) An economic development element for the location and design of industries, transportation facilities, port facilities, tourist facilities, commerce and other developments that are particularly dependent on their location on or use of the shorelines of the state;

(b) A public access element making provision for public access to publicly owned areas;

(c) A recreational element for the preservation and enlargement of recreational opportunities, including but not limited to parks, tidelands, beaches, and recreational areas;

(d) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public utilities and facilities, all correlated with the shoreline use element;

(e) A use element which considers the proposed general distribution and general location and extent of the use on shorelines and adjacent land areas for housing, business, industry, transportation, agriculture, natural resources, recreation, education, public buildings and grounds, and other categories of public and private uses of the land;

(f) A conservation element for the preservation of natural resources, including but not limited to scenic vistas, aesthetics, and vital estuarine areas for fisheries and wildlife protection;

(g) An historic, cultural, scientific, and educational element for the protection and restoration of buildings, sites, and areas having historic, cultural, scientific, or educational values; and

(h) Any other element deemed appropriate or necessary to effectuate the policy of this chapter.

(3) The master programs shall include such map or maps, descriptive text, diagrams and charts, or other descriptive material as are necessary to provide for ease of understanding.

(4) Master programs will reflect that state-owned shorelines of the state are particularly adapted to providing wilderness beaches, ecological study areas, and

other recreational activities for the public and will give appropriate special consideration to same.

(5) Each master program shall contain provisions to allow for the varying of the application of use regulations of the program, including provisions for permits for conditional uses and variances, to insure that strict implementation of a program will not create unnecessary hardships or thwart the policy enumerated in RCW 90.58.020. Any such varying shall be allowed only if extraordinary circumstances are shown and the public interest suffers no substantial detrimental effect. The concept of this subsection shall be incorporated in the rules adopted by the department relating to the establishment of a permit system as provided in RCW 90.58.140(3). [1971 ex.s. c 286 § 10.]

RCW 90.58.110 Development of program within two or more adjacent local government jurisdictions—Development of program in segments, when. (1) Whenever it shall appear to the director that a master program should be developed for a region of the shorelines of the state which includes lands and waters located in two or more adjacent local government jurisdictions, the director shall designate such region and notify the appropriate units of local government thereof. It shall be the duty of the notified units to develop cooperatively an inventory and master program in accordance with and within the time provided in RCW 90.58.080.

(2) At the discretion of the department, a local government master program may be adopted in segments applicable to particular areas so that immediate attention may be given to those areas of the shorelines of the state in most need of a use regulation. [1971 ex.s. c 286 § 11.]

RCW 90.58.120 Adoption of rules, programs, etc., subject to RCW 34.04.025—Public hearings, notice of—Public inspection after approval or adoption. All rules, regulations, master programs, designations, and guidelines, issued by the department, shall be adopted or approved in accordance with the provisions of RCW 34.04.025 insofar as such provisions are not inconsistent with the provisions of this chapter. In addition:

(1) Prior to the approval or adoption by the department of a master program, or portion thereof, at least one public hearing shall be held in each county affected by a program or portion thereof for the purpose of obtaining the views and comments of the public. Notice of each such hearing shall be published at least once in each of the three weeks immediately preceding the hearing in one or more newspapers of general circulation in the county in which the hearing is to be held.

(2) All guidelines, regulations, designations or master programs adopted or approved under this chapter shall be available for public inspection at the office of the department or the appropriate county auditor and city clerk. The terms "adopt" and "approve" for purposes of this section, shall include modifications and rescission of guidelines. [1975 1st ex.s. c 182 § 2; 1971 ex.s. c 286 § 12.]

RCW 90.58.130 Involvement of all persons and entities having interest, means. To insure that all persons and entities having an interest in the guidelines and master programs developed under this chapter are provided with a full opportunity for involvement in both their development and implementation, the department and local governments shall:

(1) Make reasonable efforts to inform the people of the state about the shoreline management program of this chapter and in the performance of the responsibilities provided in this chapter, shall not only invite but actively encourage participation by all persons and private groups and entities showing an interest in shoreline management programs of this chapter; and

(2) Invite and encourage participation by all agencies of federal, state, and local government, including municipal and public corporations, having interests or responsibilities relating to the shorelines of the state. State and local agencies are directed to participate fully to insure that their interests are fully considered by the department and local governments. [1971 ex.s. c 286 § 13.]

RCW 90.58.140 Development permits—Grounds for granting—Administration by local government, conditions—Applications—Notices—Rescission—When permits not required—Approval when permit for variance or conditional use. (1) No development shall be undertaken on the shorelines of the state except those which are consistent with the policy of this chapter and, after adoption or approval, as appropriate, the applicable guidelines, regulations or master program.

(2) No substantial development shall be undertaken on shorelines of the state without first obtaining a permit from the government entity having administrative jurisdiction under this chapter.

A permit shall be granted:

(a) From June 1, 1971 until such time as an applicable master program has become effective, only when the development proposed is consistent with: (i) The policy of RCW 90.58.020; and (ii) after their adoption, the guidelines and regulations of the department; and (iii) so far as can be ascertained, the master program being developed for the area;

(b) After adoption or approval, as appropriate, by the department of an applicable master program, only when the development proposed is consistent with the applicable master program and the provisions of chapter 90.58 RCW.

(3) Local government shall establish a program, consistent with rules adopted by the department, for the administration and enforcement of the permit system provided in this section. The administration of the system so established shall be performed exclusively by local government.

(4) Local government shall require notification of the public of all applications for permits governed by any permit system established pursuant to subsection (3) of this section by ensuring that:

(a) A notice of such an application is published at least once a week on the same day of the week for two

consecutive weeks in a legal newspaper of general circulation within the area in which the development is proposed; and

(b) Additional notice of such an application is given by at least one of the following methods:

(i) Mailing of the notice to the latest recorded real property owners as shown by the records of the county assessor within at least three hundred feet of the boundary of the property upon which the substantial development is proposed;

(ii) Posting of the notice in a conspicuous manner on the property upon which the project is to be constructed; or

(iii) Any other manner deemed appropriate by local authorities to accomplish the objectives of reasonable notice to adjacent landowners and the public.

Such notices shall include a statement that any person desiring to submit written comments concerning an application, or desiring to receive a copy of the final order concerning an application as expeditiously as possible after the issuance of the order, may submit such comments or such requests for orders to the local government within thirty days of the last date the notice is to be published pursuant to subsection (a) of this subsection. Local government shall forward, in a timely manner following the issuance of an order, a copy of the order to each person who submits a request for such order.

If a hearing is to be held on an application, notices of such a hearing shall include a statement that any person may submit oral or written comments on an application at such hearing.

(5) Such system shall include provisions to assure that construction pursuant to a permit will not begin or be authorized until thirty days from the date the final order was filed as provided in subsection (6) of this section; or until all review proceedings are terminated if such proceedings were initiated within thirty days from the date of filing as defined in subsection (6) of this section except as follows:

(a) In the case of any permit issued to the state of Washington, department of highways, for the construction and modification of the SR 90 (I-90) bridges across Lake Washington, such construction may begin after thirty days from the date of filing;

(b) If a permit is granted by the local government and (i) the granting of the permit is appealed to the shorelines hearings board within thirty days of the date of filing, (ii) the hearings board approves the granting of the permit by the local government or approves a portion of the substantial development for which the local government issued the permit, and (iii) an appeal for judicial review of the hearings board decision is filed pursuant to the provisions of chapter 34.04 RCW, the permittee may request, within ten days of the filing of the appeal with the court, a hearing before the court to determine whether construction may begin pursuant to the permit approved by the hearings board or to a revised permit issued pursuant to the order of the hearings board. If, at the conclusion of the hearing, the court finds that construction pursuant to such a permit would not involve a significant, irreversible damaging of the environment,

the court may allow the permittee to begin such construction pursuant to the approved or revised permit as the court deems appropriate. The court may require the permittee to post bonds, in the name of the local government that issued the permit, sufficient to remove the substantial development or to restore the environment if the permit is ultimately disapproved by the courts, or to alter the substantial development if such alteration is ultimately ordered by the courts: *Provided*, That construction pursuant to a permit revised at the direction of the hearings board may begin only on that portion of the substantial development for which the local government had originally issued the permit and construction pursuant to such a revised permit on other portions of the substantial development may not begin until after all review proceedings are terminated. In such a hearing before the court, the burden of proving whether such construction may involve significant irreversible damage to the environment and demonstrating whether such construction would or would not be appropriate shall be on the appellant;

(c) If a permit is granted by the local government and the granting of the permit is appealed directly to the superior court for judicial review pursuant to the proviso in RCW 90.58.180(1) as now or hereafter amended, the permittee may request the court to remand the appeal to the shorelines hearings board, in which case the appeal shall be so remanded and construction pursuant to such a permit shall be governed by the provisions of subsection (b) of this subsection or may otherwise begin after review proceedings before the hearings board are terminated if judicial review is not thereafter requested pursuant to the provisions of chapter 34.04 RCW;

If a permittee begins construction pursuant to subsections (a), (b) or (c) of this subsection, such construction shall begin at the permittee's own risk. If, as a result of judicial review, the courts order the removal of any portion of the construction or the restoration of any portion of the environment involved or require the alteration of any portion of a substantial development constructed pursuant to a permit, the permittee shall be barred from recovering damages or costs involved in adhering to such requirements from the local government that granted the permit, the hearings board, or any appellant or intervenor.

(6) Any ruling on an application for a permit under authority of this section, whether it be an approval or a denial, shall, concurrently with the transmittal of the ruling to the applicant, be filed with the department and the attorney general. With regard to a permit other than a permit governed by subsection (12) of this section, "date of filing" as used herein shall mean the date of actual receipt by the department. With regard to a permit for a variance or a conditional use, "date of filing" shall mean the date a decision of the department rendered on the permit pursuant to subsection (12) of this section is transmitted by the department to the local government. The department shall notify in writing the local government and the applicant of the date of filing.

(7) Applicants for permits under this section shall have the burden of proving that a proposed substantial development is consistent with the criteria which must

be made before a permit is granted. In any review of the granting or denial of an application for a permit as provided in RCW 90.58.180 (1) and (2) as now or hereafter amended, the person requesting the review shall have the burden of proof.

(8) Any permit may, after a hearing with adequate notice to the permittee and the public, be rescinded by the issuing authority upon the finding that a permittee has not complied with conditions of a permit. In the event the department is of the opinion that such non-compliance exists, the department shall provide written notice to the local government and the permittee. If the department is of the opinion that such noncompliance continues to exist thirty days after the date of the notice, and the local government has taken no action to rescind the permit, the department may petition the hearings board for a rescission of such permit upon written notice of such petition to the local government and the permittee: *Provided*, That the request by the department is made to the hearings board within fifteen days of the termination of the thirty day notice to the local government.

(9) The holder of a certification from the governor pursuant to chapter 80.50 RCW shall not be required to obtain a permit under this section.

(10) No permit shall be required for any development shorelines of the state included within a preliminary plat approved by the applicable state agency or local government prior to April 1, 1971, if:

(a) The final plat was approved after April 13, 1961, or the preliminary plat was approved after April 30, 1969; and

(b) The development is completed within two years after the effective date of this chapter.

(11) The applicable state agency or local government is authorized to approve a final plat with respect to shorelines of the state included within a preliminary plat approved after April 30, 1969, and prior to April 1, 1971: *Provided*, That any substantial development within the platted shorelines of the state is authorized by a permit granted pursuant to this section, or does not require a permit as provided in subsection (10) of this section, or does not require a permit because of substantial development occurred prior to June 1, 1971.

(12) Any permit for a variance or a conditional use by local government under approved master programs must be submitted to the department for its approval or disapproval. [1977 ex.s. c 358 § 1; 1975-'76 2nd ex.s. c 51 § 1; 1975 1st ex.s. c 182 § 3; 1973 2nd ex.s. c 19 § 1; 1971 ex.s. c 286 § 14.]

RCW 90.58.145 Substantial development permit—
Structures at temporary ferry terminals—Hood Canal bridge—Removal of structures. Not later than July 1, 1981, the department of transportation or any affected private property owner, or both, may apply for a substantial development permit in connection with any dolphin, wingwall, barge, pier, or similar structure constructed or assembled at a temporary ferry terminal for the purpose of providing interim transportation services necessary as a consequence of the destruction of

the Hood Canal bridge. The permit shall be processed in accordance with this chapter. Following a denial of a permit and the exhaustion of all subsequent appeals, or within six months after the new or reconstructed Hood Canal bridge is open to traffic, whichever occurs later, the department shall remove all dolphins, wingwalls, barges, piers, and similar structures constructed or assembled at the temporary ferry terminals. If a permit is granted, such structures may remain in place. [1979 1st ex.s. c 84 § 4.]

Intent—1979 1st ex.s. c 84: See note following RCW 43.21C.032.

RCW 90.58.150 Selective commercial timber cutting, when. With respect to timber situated within two hundred feet abutting landward of the ordinary high water mark within shorelines of state-wide significance, the department or local government shall allow only selective commercial timber cutting, so that no more than thirty percent of the merchantable trees may be harvested in any ten year period of time: *Provided*, That other timber harvesting methods may be permitted in those limited instances where the topography, soil conditions or silviculture practices necessary for regeneration render selective logging ecologically detrimental: *Provided further*, That clear cutting of timber which is solely incidental to the preparation of land for other uses authorized by this chapter may be permitted. [1971 ex.s. c 286 § 15.]

RCW 90.58.160 Prohibition against surface drilling for oil or gas, where. Surface drilling for oil or gas is prohibited in the waters of Puget Sound north to the Canadian boundary and the Strait of Juan de Fuca seaward from the ordinary high water mark and on all lands within one thousand feet landward from said mark. [1971 ex.s. c 286 § 16.]

RCW 90.58.170 Shorelines hearings board—Established—Members—Chairman—Quorum for decision—Expenses of members. A shorelines hearings board sitting as a quasi judicial body is hereby established within the environmental hearings office under RCW 43.21B.005. The shorelines hearings board shall be made up of six members: Three members shall be members of the pollution control hearings board; two members, one appointed by the association of Washington cities and one appointed by the association of county commissioners, both to serve at the pleasure of the associations; and the state land commissioner or his designee. The chairman of the pollution control hearings board shall be the chairman of the shorelines hearings board. A decision must be agreed to by at least four members of the board to be final. The members of the shorelines appeals board shall receive the compensation, travel, and subsistence expenses as provided in RCW 43.03.050 and 43.03.060. [1979 1st ex.s. c 47 § 6; 1971 ex.s. c 286 § 17.]

Intent—1979 1st ex.s. c 47: See note following RCW 43.21B.005.

RCW 90.58.175 Rules and regulations. The shorelines hearings board may adopt rules and regulations governing the administrative practice and procedure in and before the board. [1973 1st ex.s. c 203 § 3.]

RCW 90.58.180 Appeals from granting, denying or rescinding permits, procedure—Board to act, when—Local government appeals to board—Grounds for declaring master program invalid—Appeals to court, procedure. (1) Any person aggrieved by the granting, denying, or rescinding of a permit on shorelines of the state pursuant to RCW 90.58.140 as now or hereafter amended may seek review from the shorelines hearings board by filing a request for the same within thirty days of the date of filing as defined in RCW 90.58.140(6) as now or hereafter amended.

Concurrently with the filing of any request for review with the board as provided in this section pertaining to a final order of a local government, the requestor shall file a copy of his request with the department and the attorney general. If it appears to the department or the attorney general that the requestor has valid reasons to seek review, either the department or the attorney general may certify the request within thirty days after its receipt to the shorelines hearings board following which the board shall then, but not otherwise, review the matter covered by the requestor: *Provided*, That the failure to obtain such certification shall not preclude the requestor from obtaining a review in the superior court under any right to review otherwise available to the requestor. The department and the attorney general may intervene to protect the public interest and insure that the provisions of this chapter are complied with at any time within fifteen days from the date of the receipt by the department or the attorney general of a copy of the request for review filed pursuant to this section. The shorelines hearings board shall initially schedule review proceedings on such requests for review without regard as to whether such requests have or have not been certified or as to whether the period for the department or the attorney general to intervene has or has not expired, unless such review is to begin within thirty days of such scheduling. If at the end of the thirty day period for certification neither the department nor the attorney general has certified a request for review, the hearings board shall remove the request from its review schedule.

(2) The department or the attorney general may obtain review of any final order granting a permit, or granting or denying an application for a permit issued by a local government by filing a written request with the shorelines hearings board and the appropriate local government within thirty days from the date the final order was filed as provided in RCW 90.58.140(6) as now or hereafter amended.

(3) The review proceedings authorized in subsections (1) and (2) of this section are subject to the provisions of chapter 34.04 RCW pertaining to procedures in contested cases. Judicial review of such proceedings of the shorelines hearings board may be had as provided in chapter 34.04 RCW.

(4) Local government may appeal to the shorelines hearings board any rules, regulations, guidelines, designations, or master programs for shorelines of the state adopted or approved by the department within thirty days of the date of the adoption or approval. The board shall make a final decision within sixty days following the hearing held thereon.

(a) In an appeal relating to a master program for shorelines, the board, after full consideration of the positions of the local government and the department, shall determine the validity of the master program. If the board determines that said program:

(i) Is clearly erroneous in light of the policy of this chapter; or

(ii) Constitutes an implementation of this chapter in violation of constitutional or statutory provisions; or

(iii) Is arbitrary and capricious; or

(iv) Was developed without fully considering and evaluating all proposed master programs submitted to the department by the local government; or

(v) Was not adopted in accordance with required procedures;

the board shall enter a final decision declaring the program invalid, remanding the master program to the department with a statement of the reasons in support of the determination, and directing the department to adopt, after a thorough consultation with the affected local government, a new master program. Unless the board makes one or more of the determinations as hereinbefore provided, the board shall find the master program to be valid and enter a final decision to that effect.

(b) In an appeal relating to a master program for shorelines of state-wide significance the board shall approve the master program adopted by the department unless a local government shall, by clear and convincing evidence and argument, persuade the board that the master program approved by the department is inconsistent with the policy of RCW 90.58.020 and the applicable guidelines.

(c) In an appeal relating to rules, regulations, guidelines, master programs of state-wide significance, and designations, the standard of review provided in RCW 34.04.070 shall apply.

(5) Rules, regulations, designations, master programs, and guidelines shall be subject to review in superior court, if authorized pursuant to RCW 34.04.070: *Provided*, That no review shall be granted by a superior court on petition from a local government unless the local government shall first have obtained review under subsection (4) of this section and the petition for court review is filed within three months after the date of final decision by the shorelines hearings board. [1975-'76 2nd ex.s. c 51 § 2; 1975 1st ex.s. c 182 § 4; 1973 1st ex.s. c 203 § 2; 1971 ex.s. c 286 § 18.]

RCW 90.58.190 Review and adjustments to master programs. The department and each local government shall periodically review any master programs under its jurisdiction and make such adjustments thereto as are necessary. Each local government shall submit any proposed adjustments, to the department as soon as they are

completed. No such adjustment shall become effective until it has been approved by the department. [1971 ex.s. c 286 § 19.]

RCW 90.58.200 Rules and regulations. The department and local governments are authorized to adopt such rules as are necessary and appropriate to carry out the provisions of this chapter. [1971 ex.s. c 286 § 20.]

RCW 90.58.210 Court actions to insure against conflicting uses and to enforce. The attorney general or the attorney for the local government shall bring such injunctive, declaratory, or other actions as are necessary to insure that no uses are made of the shorelines of the state in conflict with the provisions and programs of this chapter, and to otherwise enforce the provisions of this chapter. [1971 ex.s. c 286 § 21.]

RCW 90.58.220 General penalty. In addition to incurring civil liability under RCW 90.58.210, any person found to have wilfully engaged in activities on the shorelines of the state in violation of the provisions of this chapter or any of the master programs, rules, or regulations adopted pursuant thereto shall be guilty of a class C misdemeanor, and shall be punished by a fine of not less than twenty-five nor more than one thousand dollars or by imprisonment in the county jail for not more than ninety days, or by both such fine and imprisonment: *Provided*, That the fine for the third and all subsequent violations in any five-year period shall be not less than five hundred nor more than ten thousand dollars. [1971 ex.s. c 286 § 22.]

RCW 90.58.230 Violators liable for damages resulting from violation—Attorney's fees and costs. Any person subject to the regulatory program of this chapter who violates any provision of this chapter or permit issued pursuant thereto shall be liable for all damage to public or private property arising from such violation, including the cost of restoring the affected area to its condition prior to violation. The attorney general or local government attorney shall bring suit for damages under this section on behalf of the state or local governments. Private persons shall have the right to bring suit for damages under this section on their own behalf and on the behalf of all persons similarly situated. If liability has been established for the cost of restoring an area affected by a violation the court shall make provision to assure that restoration will be accomplished within a reasonable time at the expense of the violator. In addition to such relief, including money damages, the court in its discretion may award attorney's fees and costs of the suit to the prevailing party. [1971 ex.s. c 286 § 23.]

RCW 90.58.240 Additional authority granted department and local governments. In addition to any other powers granted hereunder, the department and local governments may:

(1) Acquire lands and easements within shorelines of the state by purchase, lease, or gift, either alone or in concert with other governmental entities, when necessary to achieve implementation of master programs adopted hereunder;

(2) Accept grants, contributions, and appropriations from any agency, public or private, or individual for the purposes of this chapter;

(3) Appoint advisory committees to assist in carrying out the purposes of this chapter;

(4) Contract for professional or technical services required by it which cannot be performed by its employees. [1972 ex.s. c 53 § 1; 1971 ex.s. c 286 § 24.]

RCW 90.58.250 Department to cooperate with local governments—Grants for development of master programs. The department is directed to cooperate fully with local governments in discharging their responsibilities under this chapter. Funds shall be available for distribution to local governments on the basis of applications for preparation of master programs. Such applications shall be submitted in accordance with regulations developed by the department. The department is authorized to make and administer grants within appropriations authorized by the legislature to any local government within the state for the purpose of developing a master shorelines program.

No grant shall be made in an amount in excess of the recipient's contribution to the estimated cost of such program. [1971 ex.s. c 286 § 25.]

RCW 90.58.260 State to represent its interest before federal agencies, interstate agencies and courts. The state, through the department of ecology and the attorney general, shall represent its interest before water resource regulation management, development, and use agencies of the United States, including among others, the federal power commission, environmental protection agency, corps of engineers, department of the interior, department of agriculture and the atomic energy commission, before interstate agencies and the courts with regard to activities or uses of shorelines of the state and the program of this chapter. Where federal or interstate agency plans, activities, or procedures conflict with state policies, all reasonable steps available shall be taken by the state to preserve the integrity of its policies. [1971 ex.s. c 286 § 26.]

RCW 90.58.270 Nonapplication to certain structures, docks, developments, etc., placed in navigable waters—Nonapplication to certain rights of action, authority. (1) Nothing in this statute shall constitute authority for requiring or ordering the removal of any structures, improvements, docks, fills, or developments placed in navigable waters prior to December 4, 1969, and the consent and authorization of the state of Washington to the impairment of public rights of navigation, and corollary rights incidental thereto, caused by

the retention and maintenance of said structures, improvements, docks, fills or developments are hereby granted: *Provided*, That the consent herein given shall not relate to any structures, improvements, docks, fills, or developments placed on tidelands, shorelands, or beds underlying said waters which are in trespass or in violation of state statutes.

(2) Nothing in this section shall be construed as altering or abridging any private right of action, other than a private right which is based upon the impairment of public rights consented to in subsection (1) hereof.

(3) Nothing in this section shall be construed as altering or abridging the authority of the state or local governments to suppress or abate nuisances or to abate pollution.

(4) Subsection (1) of this section shall apply to any case pending in the courts of this state on June 1, 1971 relating to the removal of structures, improvements, docks, fills, or developments based on the impairment of public navigational rights. [1971 ex.s. c 286 § 27.]

RCW 90.58.280 Application to all state agencies, counties, public and municipal corporations. The provisions of this chapter shall be applicable to all agencies of state government, counties, and public and municipal corporations and to all shorelines of the state owned or administered by them. [1971 ex.s. c 286 § 28.]

RCW 90.58.290 Restrictions as affecting fair market value of property. The restrictions imposed by this chapter shall be considered by the county assessor in establishing the fair market value of the property. [1971 ex.s. c 286 § 29.]

RCW 90.58.300 Department as regulating state agency—Special authority. The department of ecology is designated the state agency responsible for the program of regulation of the shorelines of the state, including coastal shorelines and the shorelines of the inner tidal waters of the state, and is authorized to cooperate with the federal government and sister states and to receive benefits of any statutes of the United States whenever enacted which relate to the programs of this chapter. [1971 ex.s. c 286 § 30.]

RCW 90.58.310 Designation of shorelines of state-wide significance by legislature—Recommendation by director, procedure. Additional shorelines of the state shall be designated shorelines of state-wide significance only by affirmative action of the legislature.

The director of the department may, however, from time to time, recommend to the legislature areas of the shorelines of the state which have state-wide significance relating to special economic, ecological, educational, developmental, recreational, or aesthetic values to be designated as shorelines of state-wide significance.

Prior to making any such recommendation the director shall hold a public hearing in the county or counties

where the shoreline under consideration is located. It shall be the duty of the county commissioners of each county where such a hearing is conducted to submit their views with regard to a proposed designation to the director at such date as the director determines but in no event shall the date be later than sixty days after the public hearing in the county. [1971 ex.s. c 286 § 31.]

RCW 90.58.320 Height limitation respecting permits. No permit shall be issued pursuant to this chapter for any new or expanded building or structure of more than thirty-five feet above average grade level on shorelines of the state that will obstruct the view of a substantial number of residences on areas adjoining such shorelines except where a master program does not prohibit the same and then only when overriding considerations of the public interest will be served. [1971 ex.s. c 286 § 32.]

RCW 90.58.330 Study of shorelines of cities and towns submitted to legislature—Scope. The department of ecology, the attorney general, and the harbor line commission are directed as a matter of high priority to undertake jointly a study of the locations, uses and activities, both proposed and existing, relating to the shorelines of the cities, and towns of the state and submit a report which shall include but not be limited to the following:

- (1) Events leading to the establishment of the various harbor lines pertaining to cities of the state;
- (2) The location of all such harbor lines;
- (3) The authority for establishment and criteria used in location of the same;
- (4) Present activities and uses made within harbors and their relationship to harbor lines;
- (5) Legal aspects pertaining to any uncertainty and inconsistency; and
- (6) The relationship of federal, state and local governments to regulation of uses and activities pertaining to the area of study.

The report shall be submitted to the legislature not later than December 1, 1972. [1971 ex.s. c 286 § 33.]

RCW 90.58.340 Use policies for land adjacent to shorelines, development of. All state agencies, counties, and public and municipal corporations shall review administrative and management policies, regulations, plans, and ordinances relative to lands under their respective jurisdictions adjacent to the shorelines of the state so as the [to] achieve a use policy on said land consistent with the policy of this chapter, the guidelines, and the master programs for the shorelines of the state. The department may develop recommendations for land use control for such lands. Local governments shall, in developing use regulations for such areas, take into consideration any recommendations developed by the department as well as any other state agencies, or units of local government. [1971 ex.s. c 286 § 34.]

RCW 90.58.350 Nonapplication to treaty rights. Nothing in this chapter shall affect any rights established by treaty to which the United States is a party. [1971 ex.s. c 286 § 35.]

RCW 90.58.360 Existing requirements for permits, certificates, etc., not obviated. Nothing in this chapter shall obviate any requirement to obtain any permit, certificate, license, or approval from any state agency or local government. [1971 ex.s. c 286 § 36.]

RCW 90.58.900 Liberal construction—1971 ex.s. c 286. This chapter is exempted from the rule of strict construction, and it shall be liberally construed to give full effect to the objectives and purposes for which it was enacted. [1971 ex.s. c 286 § 37.]

RCW 90.58.910 Severability—1971 ex.s. c 286. If any provision of this chapter, or its application to any person or legal entity or circumstances, is held invalid, the remainder of the act, or the application of the provision to other persons or legal entities or circumstances, shall not be affected. [1971 ex.s. c 286 § 40.]

RCW 90.58.920 Effective date—1971 ex.s. c 286. This chapter is necessary for the immediate preservation of the public peace, health and safety, the support of the state government, and its existing institutions. This 1971 act shall take effect on June 1, 1971. The director of ecology is authorized to immediately take such steps as are necessary to insure that this 1971 act is implemented on its effective date. [1971 ex.s. c 286 § 41.]

RCW 90.58.930 Referendum to the people—1971 ex.s. c 286—Determining if act continues in force and effect. This 1971 act constitutes an alternative to Initiative 43. The secretary of state is directed to place this 1971 act on the ballot in conjunction with Initiative 43 at the next ensuing regular election.

This 1971 act shall continue in force and effect until the secretary of state certifies the election results on this 1971 act. If affirmatively approved at the ensuing regular general election, the act shall continue in effect thereafter. [1971 ex.s. c 286 § 42.]

Reviser's note: Chapter 90.58 RCW [1971 ex.s. c 286] was approved and validated at the 1972 general election as Alternative Measure 43B.

CHAPTER 190.

[S. B. 86.]

TIDELANDS IN SKAGIT, SNOHOMISH, ISLAND COUNTIES.

AN ACT relating to public lands; authorizing the withdrawal of described tidelands from sale, and from lease except for specific purposes; authorizing the use of said tidelands as public shooting grounds to be administered by the state game commission; and amending section 77.40.090, chapter 36, Laws of 1955, and RCW 77.40.090.

Be it enacted by the Legislature of the State of Washington:

SECTION 1. Section 77.40.090, chapter 36, Laws of 1955, and RCW 77.40.090 are each amended to read as follows:

The commissioner of public lands shall withdraw from sale or lease, except lease for the production of oysters or for booming or industrial uses: *Provided*, That the director of game has approved such industrial uses as not being generally incompatible with the primary function of these lands as public

Public
shooting
grounds.
Certain tide-
lands in
Skagit,
Snohomish
and Island
counties.

RCW 77.40.090
amended.

shooting grounds, the following described second class tidelands and detached tidelands within the boundaries hereinafter set forth: Those tidelands situate in front of, adjacent to, or abutting upon: government lots 3, 4 and 5, section 28 and government lot 1, section 27 and government lots 1, 2, 3 and 4, section 34, township 35 north, range 2 east, W.M., and government lots 1, 2 and 3, section 3, township 34 north, range 2 east, W.M., excepting therefrom the portion deeded by the state of Washington to the Great Northern Railway Company on December 30, 1941.

The commissioner of public lands shall withdraw from sale or lease, except lease for the production of oysters or for booming purposes, the following described second class tidelands and detached tidelands within the boundaries hereinafter set forth:

Those tidelands other than tidelands described above in this section lying within an area beginning at a point on the meander line at the Skagit-Whatcom line, thence following the meander line in its general southerly direction to the north boundary of the Swinomish Indian Reservation, thence westerly along the north line of said Indian reservation to the base of Marches Point, thence northerly along the meander line to the north meander corner on the west line of section 28, township 35 north, range 2 E., W. M., thence north to the Whatcom county line, thence easterly along said county line to the point of beginning.

Also, all tidelands of the second class, including detached tidelands in Skagit county lying south of the main channel of the Swinomish Slough.

Also, those tidelands in Snohomish and Island counties located in township 32 north, range 3 E., W. M.

Also, those tidelands lying in front of sections 1, 2 and 11 and 12, township 31 north, range 3 E., W. M., in Snohomish county.

control of the department: *Provided*, That they may be used by the commissioner of public lands for booming purposes. Should the department no longer desire to use such lands for such purposes it shall certify such fact to the commissioner of public lands, and the lands shall thereafter be under the supervision, care, and control of the commissioner of public lands and subject to sale or lease as provided by law.

77.40.090 Certain tidelands in Skagit, Snohomish, and Island counties. The commissioner of public lands shall withdraw from sale or lease, except lease for the production of oysters or for booming purposes, the following described second class tidelands and detached tidelands within the boundaries hereinafter set forth:

Those tidelands lying within an area beginning at a point on the meander line at the Skagit-Whatcom line, thence following the meander line in its general southerly direction to the north boundary of the Swinomish Indian Reservation, thence westerly along the north line of said Indian reservation to the base of Marches Point, thence northerly along the meander line to the north meander corner on the west line of section 28, township 35 north, range 2 E., W. M., thence north to the Whatcom county line, thence easterly along said county line to the point of beginning.

Also, all tidelands of the second class, including detached tidelands in Skagit county lying south of the main channel of the Swinomish Slough.

Also; those tidelands in Snohomish and Island counties located in township 32 north, range 3 E., W. M.

Also, those tidelands lying in front of sections 1, 2 and 11 and 12, township 31 north, range 3 E., W. M., in Snohomish county.

All the tidelands described in this section shall be available for use as public shooting grounds under the direction and control of the state game commission.

SCORP - FIFTH EDITION

CHAPTER III - ISSUES

ISSUE #12 - WETLANDS AND FLOODPLAINS

OBJECTIVE

It is the intent of the State of Washington to provide opportunities for the public use and enjoyment of appropriate segments of wetlands and/or floodplains, including their associated shorelands, tidelands, and estuaries, while protecting and maintaining these areas for their value as wildlife habitat and their importance in the hydrologic cycle.

SPECIFIC OBJECTIVES ARE TO:

Work through existing local and state resource management programs in continuing to promote and, where feasible, expand:

- Public access to the shorelands and tidelands of the state.
- Conservation of the wetland and floodplain resources of the state.
- Development of facilities on wetlands and floodplains for water-oriented recreational and/or conservation activities.
- Identify and evaluate those wetland and floodplain resources of the state not currently included in the Coastal Zone and Shoreline Master Programs as to their relative importance for resource conservation and/or recreational use.

GENERAL DISCUSSION

For purposes of this paper, the terms wetlands and floodplains are defined to include wetlands, floodplains, and tidelands, as well as associated shorelands, swamps, bogs, etc. Wetlands, as defined by the Department of Ecology, are flat, low-lying areas where the water table varies from time to time, in such areas as river deltas, sloughs and other environmentally similar areas.

Since 1971, three major wetland and floodplain programs have been started in Washington State. They are the State Shoreline Management Program, the Coastal Zone Management Program, and the State Tidelands Program, which is the oldest. These three programs and their relationships to recreation and resource conservation on wetlands and floodplains are the subject of the following discussion.

The first program is guided by the Shoreline Management Act of 1971 (RCW 90.58). This Act serves as the principal legal base for the management of all shorelines in the state, including most larger wetland and floodplain areas. The Act applies to all marine water areas of the state, to streams with a mean annual flow of 20 cubic feet per second or more, and to lakes larger than 20 acres. It also applies to adjacent land areas within 200 feet of the ordinary high water mark, and to all marshes, bogs, swamps, floodways, river deltas, and floodplains associated with water bodies subject to the Act. In all, there are 791 lakes, 965 rivers and streams, some 2,400 miles of marine shoreline, and over 3,000 square miles of marine waters subject to the Act. (Dep. Ecol. 1976.) 1,847 miles of the shoreline have beaches, and the remaining 490 miles consist of rocky headlands, marsh areas, bulkheads and revetments. (Dep. Ecol. 1976. p. 5.)

Primary emphasis in managing shorelines for public benefit is given to "Shorelines of Statewide Significance". These shorelines include:

- a. The coastal area between ordinary high water mark and Cape Disappointment on the south, to Cape Flattery on the north, including harbors, bays, estuaries, and inlets.
- b. Selected estuarine and marine environments of Puget Sound and the Straits of Juan de Fuca, including portions of the Nisqually Delta, Birch Bay, Hood Canal, Skagit Bay, and Padilla Bay.
- c. The waters of Puget Sound and the Straits of Juan de Fuca north to the Canadian border.
- d. Lakes, with a surface acreage of 1,000 acres or more, measured at the ordinary high water mark.
- e. Rivers west of the Cascades at 1,000 + c.f.s. or more, and rivers flowing east of the Cascades at 200 + c.f.s., or downstream from the first 300 square miles of drainage area, whichever is longer.

Priority uses for these shorelines are identified for state and local authorities. Basically, statewide interests take precedence over local interests, and higher value is given to the long-term preservation of these resources than increased public recreational access and use. Since most of the significant wetland and floodplain areas of the state are covered by the Shoreline Management Act, these same preferences apply. However, more of the traditional recreational activities which are dependent upon, or enhanced by, water normally occur in tideland areas, rather than on wetland areas.

In developing guidelines for local agencies to use in preparing their Shoreline Master Programs, the Department of Ecology suggests categorization into four distinct environment types: natural, conservancy, rural, and urban. The existing development pattern, the biophysical capabilities, and the desires of the local community help shape these types. Although the number of environments chosen may vary from one local agency to another, the guidelines do achieve a basic standardization. (Dep. Ecol. 1976. p. 32.) The guidelines

specify that local programs include the following plan elements in regard to recreation:

- An assessment of the need for providing public access to shoreline areas.
- An evaluation of the maintenance and growth opportunities via acquisition and development that includes less-than-fee acquisition, and an analysis of preservation alternatives of the natural shoreline resources. Master programs were also to recognize existing state parks, wildlife recreation areas, national parks, national wildlife refuges, and other areas identified for preservation, including protection and restoration of building sites, and areas having historic, cultural, educational, or scientific values. (Dep. Ecol. 1976. p. 134, 135.)

As of July, 1978, Chapter 173-19 Washington Administrative Code (WAC) identified 37 counties and 155 incorporated cities in the state with approved Shoreline Master Plans.

The second program affecting floodplains and wetlands is the Coastal Zone Management Act of 1972 (PL 92-583). This Act provides the state with a new opportunity to construct a comprehensive program for managing the state's coastal resources. With the Shoreline Management Act providing the legal authority and general direction for the state, the Washington State Coastal Zone Management Plan was completed in 1976, and approved by the federal government as the first Coastal Zone Management Plan in the nation. This Plan and the Shoreline Management Act provide the basic policies and guidelines for the planning, management, and use of wetlands and floodplains in Washington today. Regulations and specific criteria for the designation of wetlands have been established by the State Department of Ecology for use in Shoreline Management Plans under Chapter 173.22 WAC.

Floodplains, while also being included in Shoreline Master Plans when they fall within legally defined shorelines, receive special attention from local agencies and the federal government through the Federal Flood Insurance Program. Floodplain management regulations are the responsibility of local governments under standards and criteria established with the National Flood Insurance Program. Failure to meet those requirements and to purchase flood insurance will cut off all federally insured mortgages in the community. (Dep. Ecol. 1976. p. 67.)

In the State of Washington, there have been 269 cities and counties identified as "flood prone" communities. 237 of these communities have adopted "floodplain management plans", or "preliminary plans", which have been approved by the federal government, thereby making them eligible for the National Flood Insurance Program. (Dep. Ecol. 1979.) While this insurance program has no direct relationship to the provision of recreational opportunities, many of the plans emphasize the importance of retaining the natural environment in both the floodway and the floodplain. Floodways must remain open space by law, but floodplains can be identified for other uses. Minimal development of recreational facilities has been found to be very compatible for floodplain areas, and recommendations for such types of development as golf courses, athletic fields, trails, and overnight campgrounds are frequently found in community park and recreation plans, shoreline management plans, and other land use planning documents.

For recreation and related planning purposes, the Heritage Conservation and Recreation Service's 1979 Guidelines (draft) for Floodplain Management and Wetlands Protection defines floodplains as: "the lowland and relatively flat areas adjoining inland and coastal waters, including floodprone areas of offshore islands, including, at a minimum, that area subject to a one percent or greater chance of flooding in any given year". No definition is provided for wetlands.

As recently as five years ago, the primary method considered for reducing potential flood damage downstream was to construct dams upstream. In the State of Washington, such actions often were, and continue to be, of multiple benefit, in that the same dam became a significant source of electrical power and other uses, including recreation. For recreation, there was often a mixed reaction, in that reservoirs created by the dams provided new or expanded forms of recreation, while reducing or eliminating others.

The construction of dams has not been eliminated as a major tool for flood control. However, another mechanism that is rapidly gaining acceptance throughout the nation and in Washington, as well, is controlled zoning of the floodplains and related lands. For recreation, this type of action can open up a wider range of recreational opportunities than might be available were the same area converted to a reservoir. Even more important is the amount of potential lands for recreational use that may be involved. Historically, under a reservoir system of flood control, a limited area received little systematic planning. More often than not, development of the area was so rapid that most public use was soon eliminated or drastically reduced. Fortunately for the State of Washington, these actions have not been as rapid or of such wide expanse as in many parts of our nation. The State Shoreline Management Act was in effect before the plight of wetlands and floodplains became of such concern that the 1977 Presidential Executive Orders #11988 and #11990 were issued in an attempt to curtail activities under federal authority which might cause adverse impacts on the national values of floodplains and wetlands. A related Exec. Or. 77-11, was also issued by Governor Ray in September, 1977, for activities by state agencies.

In general, floodplains do receive more direct attention in governmental programs than do many other land forms. Possibly, close coordination of these programs in the future could provide more specific direction, while eliminating duplication of effort and confusion in understanding and complying with them.

A third program identified at the beginning of this discussion was the State Tidelands Program. Tidelands, while an integral element of the shorelines of the state, are administered as a separate program under a different managing authority than are the Shoreline and Coastal Zone Programs.

"At the time of the adoption of the State Constitution in 1889 and upon entering statehood, Washington, following traditional land use precedents dating back to the founding of the country, asserted its ownership in the beds and shores of all navigable waters up to and including the line of ordinary high water. In the coastal zone, this ownership generally included all non-federal ocean tidelands from the mouth of the Columbia River north to the Strait of Juan de Fuca and the inward tidelands encompassing Puget Sound." (Dep. Ecol. 1976. p. 72.)

Following statehood, nearly all of the tidelands were publicly owned. However, under the new state's constitution, the riparian right of access to the water became non-existent. The Legislature, as a means of legitimizing existent and future structures, authorized the sale or lease of public tidelands to private individuals. In the ensuing years, approximately 60 percent of all state-owned tidelands were sold. That practice of selling was restricted in 1968 by policy, and discontinued in 1971 by law. The Department of Natural Resources (DNR), which administers the Tidelands Program, continues to lease tidelands for purposes of aquaculture and for various marine-related uses, but has allocated nearly 75 percent of the state's remaining tidelands as public use.

2,075 miles, or about 75 percent of Washington's shoreline landward of the extreme high waterline is in private ownership, as is about 60 percent of tidelands. Of the publicly owned coastline, the federal government owns about 155 miles, including the Olympic National Park and various wildlife refuge areas. Non-federal public ownership totals 107 miles, consisting primarily of state, county, and city parks. When those tidelands (between extreme low tide and ordinary high tide) owned by the state and managed by various public agencies are included, the public access mileage (much of it by boat only) increases to 1,228+ miles. Some of the non-federal public land is owned by port districts and utilized by waterborne commercial facilities. In addition, about 40 miles of privately owned shoreline is used for recreational purposes, such as resort areas and privately owned marinas. (Dep. Ecol. 1976. p. 10.)

DNR has published a statement of policies and guidelines which constitutes a proprietary land management plan for marine lands. The plan applies to all DNR managed tidelands, harbor areas, and beds of navigable waters. It does not, however, apply to aquatic lands managed by other government agencies. The plan is broken down into six multiple use categories: (1) Navigation and Commerce; (2) Public Use; (3) Food, Mineral and Chemical Production; (4) Protection of the Natural Marine Environment; (5) Uses by Abutting Upland Owners; and (6) Revenue Production. (Dep. Ecol. 1976. p. 73.) Recognition of the importance of public access to and use of the state tidelands is evident throughout the plan.

Problem Statement #1

The Shoreline Management Act does not apply to those wetlands which are under 20 acres in size, unless they are associated with a "shoreline area"; therefore, these wetlands often lack adequate planning for their ultimate use or sufficient protection to assure their future retention.

Discussion

Because Shoreline Master Plans do not cover wetlands unassociated with identified shorelines, these wetlands are often overlooked. They are thought of as "lands with drainage problems", rather than as a vital wildlife habitat, and a critical element of the natural environment. When such areas are in close proximity to major urban areas, competition between uses, including various forms of recreation, becomes extremely keen.

While the loss of one small wetland site to development (including recreational facilities), may cause minimal impact on the water table, the food chain, the drainage patterns, or other natural actions, the cumulative effect of several such losses in a given area or on a statewide basis could be significant. For example, in parts of eastern Washington "interim" or seasonal wetlands occur, as in the scablands area. These resources are virtually overlooked, but do provide a vital link for wildlife and recreation potential. Until additional information is known regarding the types of wetlands, specific actions for their protection will probably be extremely limited. There is a need for a program to provide for an authorized mitigation of wetland losses through restoration of altered wetlands, or creation of new ones, as alternatives to outright prohibition of all activities or development actions related to specific areas and sites.

Proposed State Policy or Position

The State of Washington recognizes the importance of retaining wetlands in their natural state as wildlife habitat areas, as natural drainage basins, and as potential sites for a wide variety of uses that are beneficial to the citizens of this state. In order to provide adequate information on which to base future decisions regarding the use of wetlands, it is recommended that actions be taken by the appropriate state agencies to:

- Initiate a public education program on wetland values.
- Establish a system of wetland identification and inventory from which a baseline can be established to measure the effect and impact of wetland losses.
- Develop a more specific, coordinated, and generally understood wetland criteria and protection policy for use by state and federal resource agencies.
- Develop a program for mitigation of wetland losses caused by deletion of wetland habitats.

Problem Statement #2

Legal directives, programs and plans exist at all levels of government that evaluate the conservation of resources and/or public use of floodplains and related resources. However, there is no effort being made to implement an overall program which would establish a unified effort, direction, and priority for action in the conservation of the state's floodplains.

Discussion

Some floodplains, for a wide variety of reasons, several of which are discussed in this paper, have been given major recognition in recent years through federal, state, and local laws and planning programs. In many instances, actions have been taken to implement those acquisition and/or development proposals, zoning ordinances, or other recommendations designed to conserve these critical resources and/or to increase their benefits to the citizens of the state. However, because these many programs lack coordination, or individually are not of sufficient scope to accomplish recommended actions, some problems continue in intensity and in scope.

In developing the Coastal Zone Management Plan for the state, the Department of Ecology identified ten "areas of particular concern". This identification was based on existing authorities, expression of legislative concern, and current resource management conflicts. While broader in scope than just floodplains alone, most do contain significant amounts of floodplains. It should be noted, also, that only areas in western Washington were identified, since they were developed for use in the Coastal Zone Program, only. The identified areas are:

1. The Nisqually Estuary.
2. Hood Canal.
3. The Snohomish River Estuary.
4. Skagit and Padilla Bays.
5. The Northern Strait and Puget Sound
Petroleum Transfer and Processing
Area.
6. The Dungeness Estuary and Spit Complex.
7. Grays Harbor.
8. The Willapa Bay Estuary.
9. The Pacific Coastal Dune Area.
10. The Continental Shelf.

Proposed State Policy or Position

The State of Washington recognizes the importance of retaining floodplains, or appropriate segments thereof, in their natural state, as well as their potential for a wide variety of recreational uses that may be enjoyed by the citizens of this state. The state further recognizes that some areas are of greater concern than others, and, therefore, recommends that appropriate actions be taken by the state, in cooperation with other levels of government to:

- Identify the most significant floodplain areas throughout the state having sites within them warranting retention under public ownership and/or management for conservation purposes, or for the development of public recreational facilities or access to bodies of water.
- Establish a mutually acceptable listing of those floodplain areas which are considered to be "areas of particular concern".
- Establish a specific program for their acquisition, development, and management, as appropriate to specific sites.

Problem Statement #3

Saltwater tidelands provide one of the most popular recreational resources available within the state, but access to and use of these saltwater beaches is often difficult due to "checkerboarded" public and upland ownerships, steep terrain of adjacent uplands, and other related problems.

Discussion

The Department of Natural Resources has an excellent tidelands identification program, and in recent years has been giving additional emphasis to increasing and marking its public access areas. Because of the large and expanding recreational use of tidelands for recreation, this program has been important to saltwater related recreational activities, such as clam digging and beachcombing. Because of the "checkerboarding" of public and private ownership, it has also created certain management problems, both in terms of marking and in control of public access. Efforts continue to reduce these problems through coordinated management activities, public education programs, and improved management techniques. Close coordination and cooperative actions with major recreational agencies, such as the State Parks and Recreation Commission and local parks and recreation departments have been, and will continue to be important to the provision of "tideland recreation".

Another factor complicating access, especially in many areas of Puget Sound are steep slopes immediately shoreward of the beach (tideland areas). Even though under public ownership, several hundred feet of vertical cliffs make any access roads or trails impossible. Therefore, heavy competition exists for the limited access sites for all uses of the tideland areas, especially in the heavily populated Puget Sound region.

Proposed State Policy or Solution

The State of Washington recognizes that saltwater beaches and tidelands are one of the most popular recreational resources of the state. It is, therefore, recommended that the appropriate public agencies of all levels of government and the private sector, wherever feasible, take every possible action to reduce the effect of "checkerboard" ownerships, whenever possible, that currently inhibit public use and access of saltwater beaches and tidelands. The tidelands identification program of the State Department of Natural Resources should be continued and, wherever feasible, expanded to accommodate increasing public use of tidelands.

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IN THE LEGISLATURE
of the
STATE OF WASHINGTON



CERTIFICATION OF ENROLLED ENACTMENT

SENATE BILL NO. 3371

CHAPTER NO. _____

Passed the Senate February 26, 19 80

Yeas 45 Nays 0

Passed the House March 12, 19 80
as amended

Yeas 83 Nays 14

March 13, 1980 - The Senate
concurred in the House amend-
ment, and passed the bill as
amended.

Yeas 48 Nays 0

CERTIFICATE

I, Sidney R. Snyder, Secretary of the Senate of the
State of Washington do hereby certify that the attached
is enrolled Senate Bill No. 3371
as passed by the Senate and the House of Representa-
tives on the dates hereon set forth.

Sidney R. Snyder

Secretary of the Senate

ENGROSSED SENATE BILL NO. 3371
AS AMENDED BY THE HOUSE

State of Washington
46th Legislature
1980 Regular Session

By Senators Peterson, Wanamaker and
Goltz (By Department of Ecology
Request)

Read first time January 21, 1980, and referred to Committee on NATURAL RESOURCES.

1 AN ACT Relating to tidelands; authorizing the purchase of
2 tidelands for establishment of an estuarine sanctuary;
3 and making an appropriation.

4 BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF WASHINGTON:

5 NEW SECTION. Section 1. For the purpose of establishing
6 an estuarine sanctuary in Padilla Bay, Skagit county, there is
7 appropriated from the general fund to the department of ecology
8 for the biennium ending June 30, 1981, the sum of seventy
9 thousand dollars, or so much thereof as may be necessary. The
10 department of ecology may use such funds for the acquisition of
11 tidelands within Padilla Bay, Skagit county, either through
12 direct expenditures or through grants to a federal, state, or
13 local agency and for administering the establishment of an
14 estuarine sanctuary in Padilla Bay, Skagit County.

15 No moneys appropriated under this section may be used by
16 the department of ecology for acquisition of tidelands unless
17 made in combination with an equal match of moneys from other
18 public or private sources.

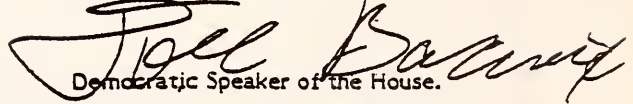
19 Prior to acquiring any tidelands, the department of
20 ecology shall determine that the use of the property to be
21 acquired will be consistent with chapter 90.58 RCW, the
22 shoreline management act, and guideline and master programs
23 adopted thereunder.


24 Hunting, fishing, boating and noncommercial taking of
25 shellfish shall be authorized but shall be regulated on
26 properties acquired under this section or as result of the
27 passage of this section.

Passed the Senate March 13, 1980.


President of the Senate.

Passed the House March 12, 1980.


Democratic Speaker of the House.


Republican Speaker of the House.

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